Public Utilities

Volume 62 No. 6 September 11, 1958

INSTITUTIONAL HOLDINGS OF UTILITY SECURITIES
By Owen Ely

« »

Co-operation in Power
By Stan Reed

« »

Are They Egging You on to Become a Writer?
By James H. Collins

« »

The Financing Outlook for the Utility Industry

BOSTON UNIVERSITY

if *you want optimum cable service...*

—make it Kerite. For Kerite combines outer coverings developed from the research and development laboratories of today for use with the proved service ability of Kerite insulation.

Kerite cables are available in a wide variety of forms and sizes, with the most modern coverings to meet your specific requirements.

Our headquarters is at 30 Church Street, New York 7.
Branches in Ardmore, Pa., Boston, Cleveland, Chicago, Houston, St. Louis, San Francisco, Glendale, Cal.

KERITE CABLE

it's the **KERITE** *that makes the difference*

Editor-in-Chief • ELLSWORTH NICHOLS
Editor • FRANCIS X. WELCH
Associate Editors • RALPH S. CHILD
NEIL H. DUFFY
NORMAN J. BARATT
GEORGE E. TURNER
FORRESTER MAPHIS
Assistant Editors • M. C. MCCARTHY
M. L. WILLIAMS
Financial Editor • OWEN ELY

Advertising Manager • E. L. COOKE
Circulation Manager • E. S. STEVENS

REPRINTS OF ARTICLES
(200 or more copies)
available on orders received within 30 days after publication date.
Address
WASHINGTON OFFICE
for quotations.

PUBLIC UTILITIES FORTNIGHTLY . . stands for federal and state regulation of both privately owned and operated utilities and publicly owned and operated utilities, on a fair and nondiscriminatory basis; for nondiscriminatory administration of laws; for equitable and nondiscriminatory taxation; and, in general—for the perpetuation of the free enterprise system. It is an open forum for the free expression of opinion concerning public utility regulation and allied topics. It is supported by subscription and advertising revenue; it is not the mouthpiece of any group or faction; it is not under the editorial supervision of, nor does it bear the endorsement of, any organization or association. The editors do not assume responsibility for the opinions expressed by its contributors.

Subscriptions: Address correspondence to PUBLIC UTILITIES FORTNIGHTLY, circulation department, 332 Pennsylvania Building, Washington 4, D. C. Allow one month for change of address.

Single copies $1.00. Annual subscription price (26 issues a year): United States and possessions, $15.00; Pan American countries, $15.00; Canada $16.00; all other countries, $17.50.

Entered as second-class matter April 29, 1915, under the Act of March 3, 1879, at the Post Office at Baltimore, Md., December 31, 1936. Copyrighted 1958, by Public Utilities Reports, Inc. Printed in U. S. A.

Public Utilities FORTNIGHTLY

VOLUME 62 SEPTEMBER 11, 1958 NUMBER 6

ARTICLES

Institutional Holdings of Utility Securities ..... *Owen Ely* 361
An authoritative and informative analysis of utility securities held by insurance companies and other institutional investors.

Co-operation in Power ..... *Stan Reed* 369
A discussion of the Puget Sound Utilities Council, organized by former rivals in the field of public service.

Are They Egging You on to Become a Writer? ..... *James H. Collins* 379
This author has checked into the technique of writing accurate, intelligent, and persuasive reports.

FEATURE SECTIONS

Washington and the Utilities 389
Telephone and Telegraph 393
Financial News and Comment ..... *Owen Ely* 396
What Others Think 405
The Financing Outlook for the Utility Industry 405
Adequate Rates and Service Improvements 410
The March of Events 413
Progress of Regulation 417
Industrial Progress 26

- *Pages with the Editors* . 6
- *Coming in the Next Issue* 10
- *Remarkable Remarks* .. 12
- *Utilities Almanack* 23
- *Frontispiece* 24
- *Index to Advertisers* .. 40

PUBLIC UTILITIES REPORTS, INC., PUBLISHERS

Executive, Editorial & Advertising Offices .....332 PENNSYLVANIA BLDG., WASHINGTON 4, D. C.
Publication Office .....CANDLER BUILDING, BALTIMORE 2, MD.
Advertising Representatives:
New York 6: Robert S. Farley, 111 Broadway. COrtland 7-6638
Cleveland 15: Macintyre-Simpson & Woods, 1900 Euclid Avenue, CHerry 1-1501
Chicago 1: Macintyre-Simpson & Woods, 75 E. Wacker Drive, CEntral 6-1715
Pacific Coast: M. D. Pugh & Associates
2721 No. Marengo Avenue, Altadena, Calif. SYcamore 7-2894
and
1050 Lincoln Avenue, Palo Alto, Calif. DAvenport 5-4815

International Trucks carry your crew

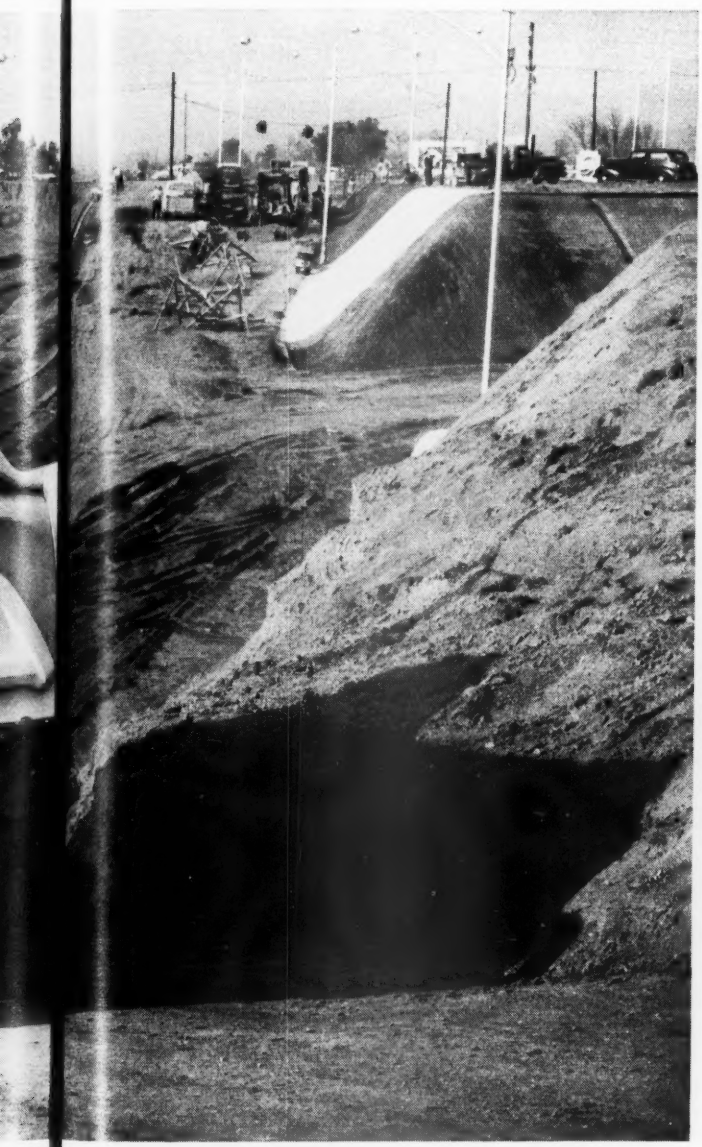
Cabs that carry work crews in all-weather comfort . . .

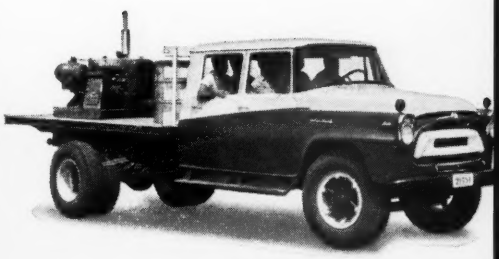
Chassis that stand up in any kind of going . . .

Trucks that answer your job with the easiest handling and the surest six-cylinder economy money can buy!

INTERNATIONAL TRUCKS

...eund equipment too!





There's room for six men in this INTERNATIONAL Truck with Travel-Crew Cab! Plenty of leg room fore and aft. Seats measure over five feet door-to-door. Third door to rear seat. Cab and chassis are warranted work-*ready*. You pay only one low *complete unit* price. You get single-unit tightness for longer life. "Six" economy in compact-design or conventional models up to 33,000 lbs. GVW.

The exclusive INTERNATIONAL Travelette takes six men anywhere with the comfort of a station wagon. Yet *all-truck* engineering of the cab, cab mountings and chassis builds in a durability that takes any job in stride. Its all-steel box hauls a standard pickup load. The result is two-for-one economy that makes an INTERNATIONAL Travelette cost *least* to own!

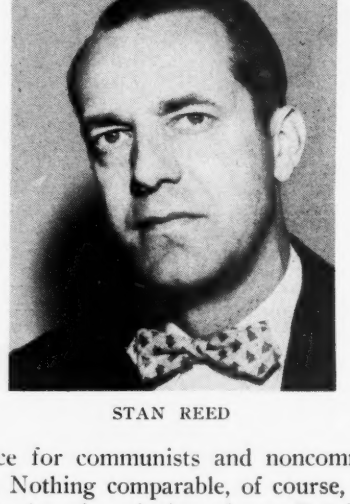
If you **need a truck to meet the pace of extra jobs** . . . this is the one to buy! Here's a husky six-cylinder service-utility pickup that's all-truck engineered to speed men and materials from job to job with true short-stroke "six" power and economy. Bodies over eight feet long facilitate fast, efficient stowage of parts and tools—provide plenty of open area for bulky equipment.

...ost least to own!

INTERNATIONAL HARVESTER COMPANY, CHICAGO
Motor Trucks • Crawler Tractors
Construction Equipment • McCormick®
Farm Equipment and Farmall® Tractors

Pages with the Editors

LEGAL advisers to investor-owned utility companies who were unable to attend the convention of the American Bar Association in Los Angeles late last month no doubt are busily scanning the reports from the convention on matters of vital interest to regulated utility industries. It is to be hoped that they do not overlook the address of the ABA's outgoing president, Charles S. Rhyne, who recently returned from the Soviet Union. Rhyne gave the convention the benefit of his first-hand observations on Soviet law, some of which invite serious thought about the present trend of the American legal system.



STAN REED

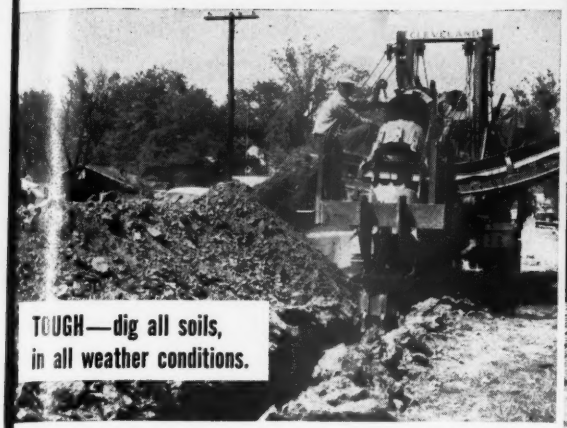
RHYNE has been in the forefront of those working to develop a rule of law to which all the nations of the world might subscribe. Such a universal rule of law, however, must be preceded by a general consensus as to the nature of law, as Rhyne has acknowledged. His study of Soviet jurisprudence apparently has convinced him that no such consensus exists and that there is a yawning chasm between the concept of law prevalent in this country and western nations generally, and that which prevails in Russia.

LOOKING at some relatively recent developments in American legal thinking, it might be asked whether the chasm is as wide as Rhyne appears to believe. An expert on Soviet legalism has said that its "underlying assumption [is that the] subject of law, legal man, is not a mature, independent adult . . . but an immature, dependent child or youth. . . . The Soviet . . . judge is like a parent." It takes little imagination to see that this is essentially the concept underlying the ideal of the welfare state—an ideal, needless to say, that has attracted and continues to attract numerous influential people in this country.

RHYNE observed that the Soviet legal system provides a different type of justice for communists and noncommunists. Nothing comparable, of course, exists in American jurisprudence. But it is not farfetched to remark that there is a "libertarian" school of legal thinking, often manifest in the decisions of the present U. S. Supreme Court, which professes to see in the U. S. Constitution a distinction between property rights, on the one hand, and so-called "human" rights on the other. Under this theory, which excludes property rights from the general category of human rights, the latter must always prevail over the former when the two are in conflict.

THE retreat from personal responsibility, which is the hallmark of welfare-statism, finds its clearest expression in recent developments in the field of criminal law. The welfare-statist, who believes that man is happiest when relieved of the responsibility of managing his own affairs which others can manage much better, cannot justify in his own mind holding men responsible for anything they might do. As a consequence, we find the tendency to attribute criminal acts to social maladjustment or physical deficiencies which require society to adjust to the criminal and not the criminal to society.

FUNDAMENTALLY, of course, American



TOUGH—dig all soils, in all weather conditions.

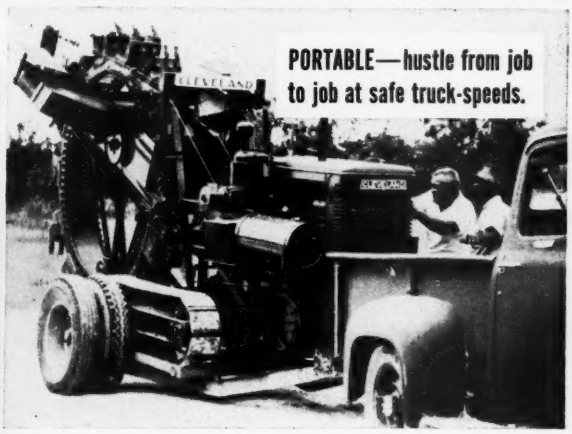
COMPACT—fit narrowest rights-of-way.

BUDGET MEMO:

Clevelands meet every requirement for gas distribution trenching at lowest cost per foot year after year after year.

VERSATILE—dig services, extensions, mains.

LIGHT AND SMOOTH—easy on lawns and sidewalks.



PORTABLE—hustle from job to job at safe truck-speeds.

Good Everywhere®

The CLEVELAND TRENCHER Co.

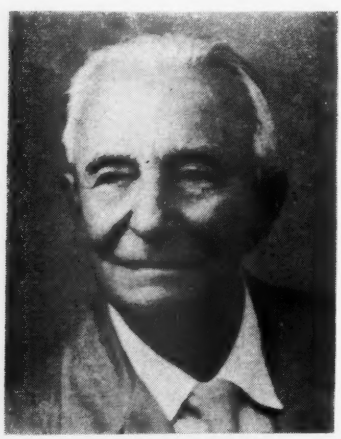
20100 St. Clair Avenue • Cleveland 17, Ohio

jurisprudence is a far cry from that which prevails in the Soviet Union, as Rhyne's address clearly pointed out. But it would be foolish to deny that there are powerful and influential forces at work which, if allowed to continue unchecked, could undermine the foundations of those legal concepts we are perhaps inclined too much to take for granted.

THE opening article in this issue underscores the fact that public utility securities have become a prime choice of insurance companies and other institutional investors. OWEN ELY, our financial editor, has brought together the 1957 figures on institutional holdings in public utility securities in a manner that reveals a number of interesting facts and trends. The relative investment in common stock as distinguished from senior securities is treated, while the distribution of assets of U. S. life insurance companies in all forms of securities is traced back to 1917, both in dollars and percentagewise.

* * * *

THE next Congress will undoubtedly be asked to consider seriously a proposal to establish a Columbia Valley Development Corporate Authority along lines similar to the Tennessee Valley Authority. A bill was introduced by Senator Neuberger (Democrat, Oregon) this year on behalf of the Northwest Public Power Association. Neuberger has been authorized to hold hearings throughout the Pacific Northwest on the proposal, which has already attracted a good deal of comment, both pro and con.



JAMES H. COLLINS

AGAINST this background, the article beginning on page 369 is a timely one indeed. The author, STAN REED, has brought a working journalist's background to the task of considering the importance of a unique partnership being worked out in the Pacific Northwest between so-called "public" and "private" interests.

MR. REED was graduated from the University of Washington, where he majored in journalism. At the present time he is industrial editor of the *Seattle Post-Intelligencer,* a post he has held for two years. His newspaper experience has been acquired in San Francisco, Panama, and New York city, and he spent a year in 1955 traveling in Europe as a roving reporter. In addition, MR. REED is an active free-lance writer and a contributor to various trade publications.

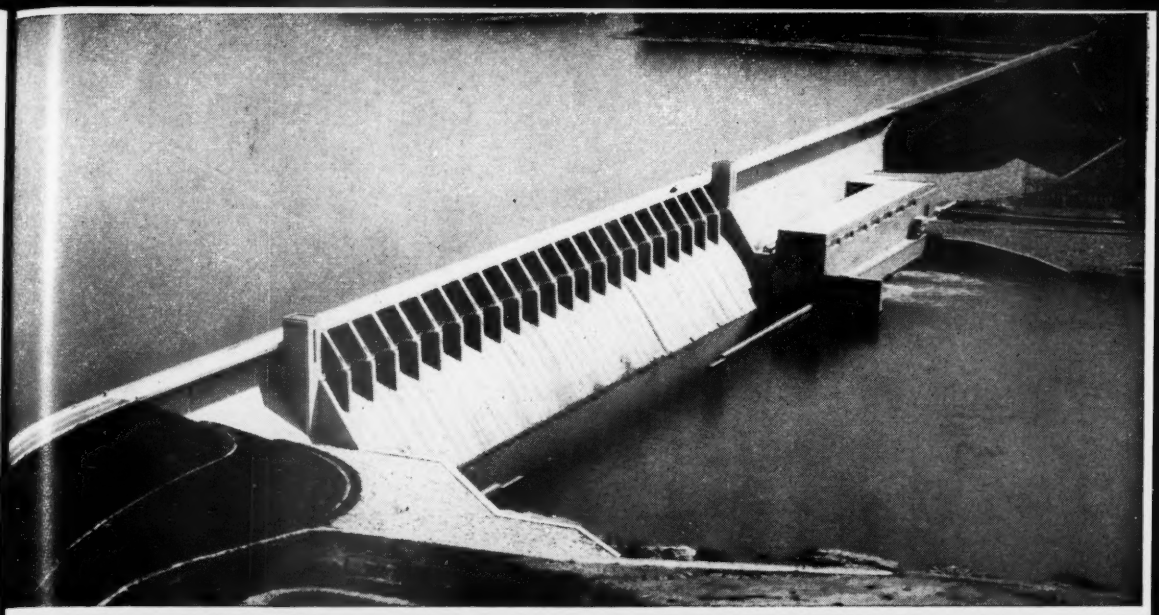
* * * *

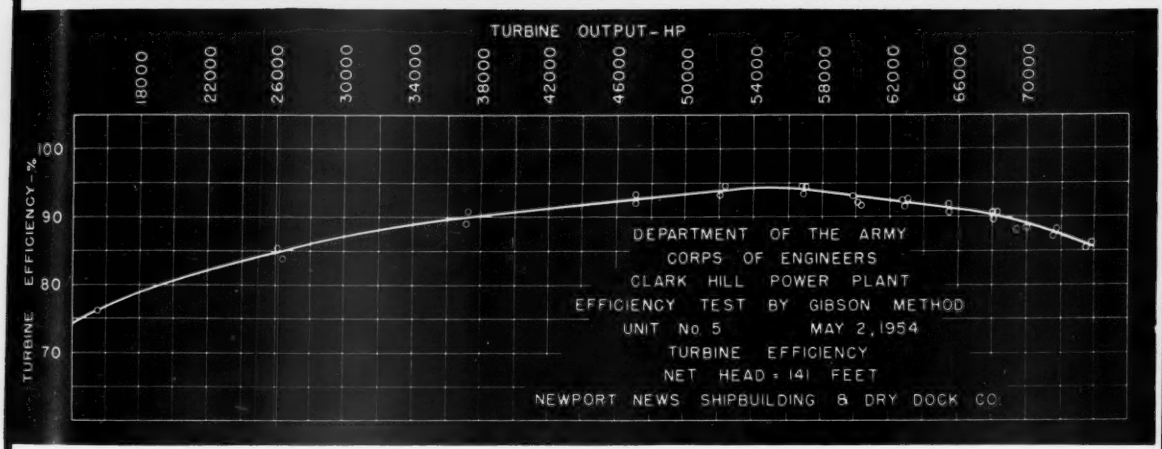
ENGINEERS who wish to improve their opportunities by acquiring an ability to write effectively will find the article bebinning on page 379 required reading. The depressing inability of many scientists and engineers to get their ideas down on paper in a way that can be understood by nonspecialists has been the subject of much discussion recently, in academic circles and elsewhere.

THE author, JAMES H. COLLINS, needs no introduction to readers of the FORTNIGHTLY, to which he has frequently contributed. He has been writing most of his life and is eminently qualified to give valuable hints on the art. MR. COLLINS began writing around 1900, has contributed to *The Saturday Evening Post* for twenty years, and has written on business subjects for many other magazines and business publications. In his article in this issue, MR. COLLINS expounds the necessary techniques of writing and attempts to dispel some of the inhibiting thoughts that usually confront beginning writers.

THE next number of this magazine will be out September 25th.

The Editors





Maximum efficiency of 94.1%

Reflects advanced practices at Newport News

THE GRAPH shows performance of a 55,000 horsepower turbine, one of seven such units built by Newport News for the Clark Hill Power Plant (see photo).

Shape of the curve is typical . . . not exceptional . . . for Newport News turbine performance. Regular, uniform, showing no-cut-off at full load, it indicates consistent delivery and stable operation.

And especially, experience in design and model testing.

At Newport News, turbine runners are continually being designed and redesigned for improvements in performance. And often upon receiving a contract for turbines, a model setting is built and complete tests made. So far, Newport News has filled turbine contracts with an aggregate rated output in excess of 7,000,000 horsepower.

Penstocks, spiral casings, valves, pumps, rack rakes and other essentials are also designed and built by Newport News. Our illustrated booklet, "WATER POWER EQUIPMENT," will be sent to you upon request.

Engineers . . . Desirable positions available at Newport News for Designers and Engineers in many categories. Address inquiries to Employment Manager.

Newport News

Shipbuilding and Dry Dock Company
Newport News, Virginia

Coming IN THE NEXT ISSUE

(September 25, 1958, issue)

☆

TAXATION AS AN INCENTIVE TO GOVERNMENT ELECTRIC POWER

In penetrating and thorough fashion, Bennett L. Smith, attorney of Fort Worth, Texas, builds an interesting case for the thesis that higher taxes for utilities mean eventual higher rates which in turn encourage tax-free public power to spawn in government. He points out that government, which is wholly dependent on taxes, should actually cater to tax-paying industries. He gives some factual data on TVA and BPA and discusses the New York state project at Niagara in some detail. Smith also calls attention to the fact that although the state of New York contends power companies, which it regulates and taxes, pay too much in federal taxes, the state itself produces electricity to save federal taxes. This, indeed, is strange doctrine.

"PUBLIC UTILITIES" NOW TAUGHT BY FEW COLLEGES

Today less than 5 per cent of our colleges and universities are teaching a course in "Public Utilities," states John D. Garwood, professor of economics at Fort Hays Kansas State College. In most institutions of higher learning, a course in "Business and Government" has replaced it. Books used in this new course deal with public utilities, but usually are confined to two or three chapters at most. Few doctoral dissertations on the public utility field are prepared any more. Government's increased activity in the sphere of business has given impetus to the popularity of "Business and Government" courses. Teachers assert that "Public Utilities" is too specialized a course and that in addition there are relatively few educators qualified to teach such a subject. Professor Garwood describes key books now being used in colleges that will shape the economic thinking of our embryo citizens. He recommends an examination of these teachings since the concepts inculcated today will profoundly affect the actions of tomorrow.

DOES IT PAY TO CAPITALIZE TAXES DURING CONSTRUCTION?

Willard F. Stanley, author of many articles on utility finance and president of Corporate Services, Inc., of New York, analyzes the advantages accruing to a utility by capitalization of taxes during construction. Some local tax laws, however, make such action impossible for a few companies, he admits. But tax capitalization is permissible under the Uniform System of Accounts of the NARUC and the FPC. It has the effect of enhancing the book cost of new facilities, creates average increased values for common stockholders, gives better prices to the company in its common stock financing. Stanley relates facts and figures that point up the benefits of such a policy in convincing fashion meriting careful consideration by utility managements.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***

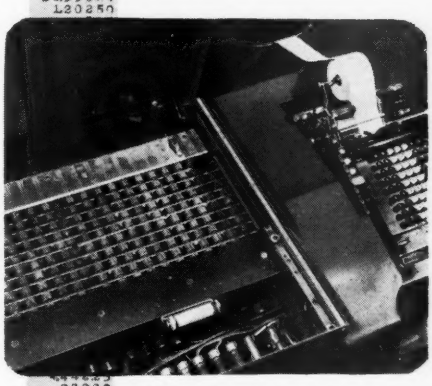
"One-Step" analyses

. . . long step toward better rates

CONTINUING monthly billing analyses produced by the "One-Step" Method* provide—complete, accurately documented data on past and present operations, plus a sound base for forecasting future ones. Having data in depth on these important factors is indeed a *long* step toward securing better rates, because they present to commissions unassailable facts which help to justify the granting of rate increases. In the 20 years we have served utility companies R & S analyses have figured prominently in hundreds of rate cases—commissions know and respect the validity of our work, a plus factor in your favor.

Using the "One-Step" Method is simplicity itself, because all the work is done in our office, neither your personnel nor equipment are required. Cost-conscious utility executives will be pleased with the modest cost of our service; less in fact than preparation by their own staffs, and production of data is much faster.

We would like to send you a copy of our booklet fully describing the "One-Step" Method of Bill Analysis—a request to Dept. P will bring your copy.



*The "One-Step" Method, exclusive with R & S, is made possible by this machine of our invention.

RECORDING & STATISTICAL CORP.

100 SIXTH AVENUE
NEW YORK 13, N. Y.

Remarkable Remarks

"There never was in the world two opinions alike."
—MONTAIGNE

T. S. BURNETT
President, Pacific Mutual Life Insurance Company.

"High taxes and inflation are Siamese twins. You have got to fight both of them."

MILTON S. EISENHOWER
President, Johns Hopkins University.

"Education without freedom is no education at all. It is simply indoctrination or propaganda."

RAYMOND MOLEY
Columnist.

"Everybody gains by good government. Nobody can fail to suffer from the hatreds created by demagogues."

ROWLAND R. HUGHES
Former Director, Bureau of the Budget.

"An essential element in [the] truly incandescent prosperity has been the replacement of public spending by private spending."

BERNARD BARUCH
Financier.

"I would caution against attempting to legislate against human folly, or against the adventurous spirit which helped make America great."

AUGUSTUS B. KINZEL
Vice president, Union Carbide Corporation.

"Our nation's rate of growth and its achievements both in the market place and on the defense front hinge in the end on the effectiveness of its research."

ALFRED P. SLOAN, JR.
Honorary chairman of the board, General Motors Corporation.

"The difference between a great success and mediocrity in any type of enterprise, is the people—their knowledge; their experience; their imagination; their leadership; and how they work together."

DONALD C. POWER
President, General Telephone Corporation.

"It is only when we look upon difficulty as a challenge or even as an opportunity that progress is made. And it might even be said that if necessity is the mother of invention, then surely crisis is the father of opportunity!"

EDITORIAL STATEMENT
The Wall Street Journal.

"Killing the goose is no less an illusion for being dressed up in a theory of increased purchasing power through redistribution of profits. If the people ever fall for that illusion they will get not golden eggs but a recipe for economic stagnation."

WATKINS M. ABBITT
U. S. Representative from Virginia.

"America is at the crossroads. Our people are on trial. There must be a determination . . . to keep this country on a solid foundation of private enterprise and individual freedom. We must preserve liberty and freedom in this country. We must see that state sovereignty is respected and maintained."

This is not an offering of these securities for sale, or an offer to buy, or a solicitation of an offer to buy, any of such securities. The offering is made only by the prospectus.

The Houston Corporation

$36,188,000
5% Subordinated Debentures due August 1, 1968

1,809,400 Shares
Common Stock
(Par Value $1 per share)

Offered only in Units each consisting of $100 principal amount of Debentures and 5 shares of Common Stock, which will not be separately transferable prior to August 15, 1959 or such earlier date as the Company may elect. The Company has agreed with Blyth & Co., Inc. and Lehman Brothers that it will not make the Debentures and Common Stock separately transferable prior to March 15, 1959 without their consent.

Price $150 Per Unit

plus accrued interest on the Debentures from August 1, 1958

Copies of the prospectus may be obtained from any of the several underwriters only in states in which such underwriters are qualified to act as dealers in securities and in which the prospectus may legally be distributed.

Blyth & Co., Inc. — **Lehman Brothers**

Allen & Company — **Scharff & Jones Incorporated**

Eastman Dillon, Union Securities & Co. — **The First Boston Corporation** — **Glore, Forgan & Co.**

Goldman, Sachs & Co. — **Harriman Ripley & Co. Incorporated** — **Kidder, Peabody & Co.** — **Lazard Frères & Co.**

Merrill Lynch, Pierce, Fenner & Smith — **Smith, Barney & Co.** — **Stone & Webster Securities Corporation**

White, Weld & Co. — **Bear, Stearns & Co.** — **Equitable Securities Corporation** — **Hemphill, Noyes & Co.**

Hornblower & Weeks — **W. E. Hutton & Co.** — **Ladenburg, Thalmann & Co.** — **Lee Higginson Corporation**

Carl M. Loeb, Rhoades & Co. — **F. S. Moseley & Co.** — **Paine, Webber, Jackson & Curtis**

Wertheim & Co. — **A. C. Allyn and Company Incorporated** — **Bache & Co.** — **A. G. Becker & Co. Incorporated** — **Clark, Dodge & Co.**

Dominick & Dominick — **Francis I. duPont & Co.** — **Hallgarten & Co.** — **Hayden, Stone & Co.**

E. F. Hutton & Company — **Reynolds & Co.** — **L. F. Rothschild & Co.** — **Shields & Company**

F. S. Smithers & Co. — **Spencer Trask & Co.** — **Tucker, Anthony & R. L. Day** — **G. H. Walker & Co.**

August 20, 1958.

This advertisement appears only as a matter of record.

$68,200,000
Houston Texas Gas and Oil Corporation
First Mortgage Pipeline Bonds, 5½% Series due 1979

$39,200,000
Coastal Transmission Corporation
First Mortgage Pipeline Bonds, 5½% Series due 1979

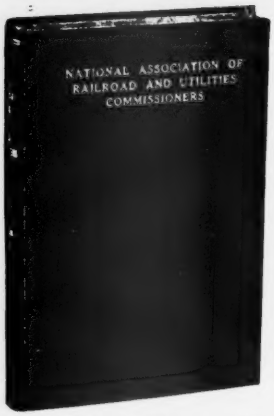
This financing has been arranged privately through the undersigned.

Blyth & Co., Inc. — **Lehman Brothers**

Allen & Company — **Scharff & Jones Incorporated**

August 20, 1958.

NOW AVAILABLE!
LIMITED EDITION!



PROCEEDINGS
1957 CONVENTION

AT MEMPHIS, TENNESSEE

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS

THIS edition contains valuable material on the subject of regulation of rates and services of public utilities and transportation companies including the following:

Rates of Public Utilities and Transportation Agencies, Depreciation, Valuation, Railroad Passenger Deficit and Regulation of Public Utilities, Panel discussions on the subjects of "Current Trends in Airline Regulation," "Current Surface Transportation Problems," and "Nuclear Energy in the Electric Industry."

Price $10.00 — 644 Pages

OTHER PUBLICATIONS OF THE ASSOCIATION

1957—Uniform System of Accounts for Water Utilities
For the purpose of applying the 1957 Revised System of Accounts for Water Utilities prescribed by State Commissions, the new editions have been printed in three (3) volumes:

Class A & B — 128 pages
Accounts for utilities having annual water operating revenues of $250,000 or more.... $4.50

Class C — 100 pages
Accounts for utilities having annual water operating revenues of $50,000 or more and less than $250,000 ..... 3.50

Class D — 64 pages
Accounts for utilities having annual water operating revenues of less than $50,000.... 2.00

Local Service Telephone Rates (Revised 1957)
An excellent compilation of rates prepared by NARUC Subcommittee on "exchange rates" for all exchanges of Bell System, the rates of cities of 50,000 population or more for Bell and Independent exchanges, and tabulation of above exchanges which had ten cent coin telephone rate in effect June 30, 1957..... 2.00

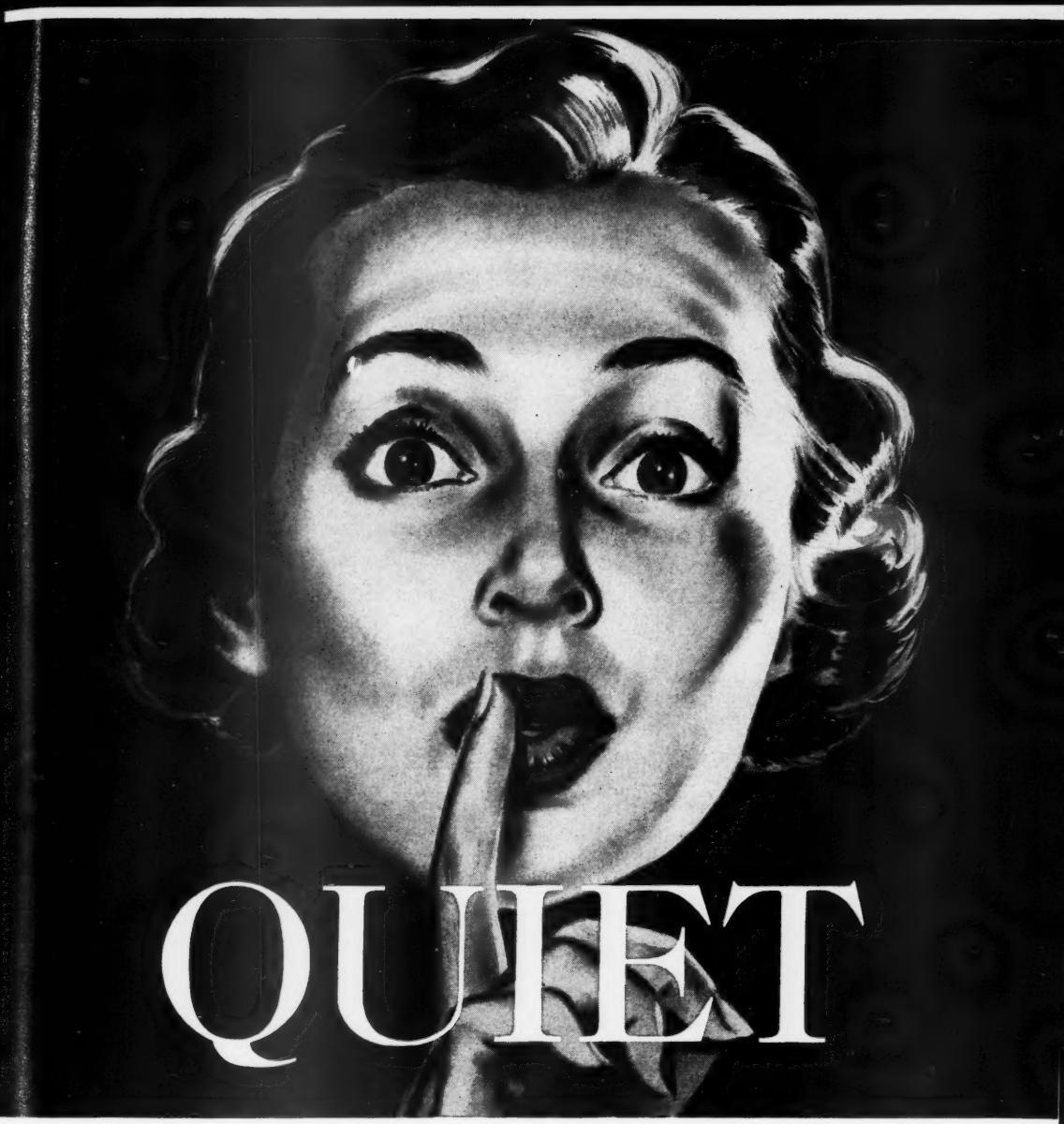
Telephone Separations Manual (Revised 1957)
Includes the 1952 addendum, the so-called Charleston Plan and the 1956 addendum, the so-called Phoenix Plan changes 2.00

Depreciation:
1943—1944 Reports of Committee on Depreciation. A comprehensive and complete analysis of the problems of depreciation on public utility regulation. 326 pages, paper bound.. 4.50
1946—Methods of Pricing Retirements from Group Property Accounts..... 1.25
1948—Letter Symbols for Mathematics of Depreciation..... 1.00
1948—Half Cycle Methods of Estimating Service Life..... 1.00
1950—Remaining Life Basis of Accounting for Depreciation..... .50
1955—Report of Committee on Depreciation (Discussion of Liberalized Depreciation under Internal Revenue Code of 1954)..... 1.25
1956—Report of Committee on Depreciation (Depreciation Rates for Electric Utilities).. 1.00

(When remittance accompanies order, we pay forwarding charges)

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS

P. O. BOX 684 **WASHINGTON 4, D. C.**



is important . . . that's why offices rely on REMINGTON NOISELESS® Typewriters

Where typing *quiet* is essential, there's nothing like the REMINGTON NOISELESS! It enables typists to turn out volumes of distinctive work with 85% less noise . . . eliminates the clack and clatter so annoying to the typist and people nearby.

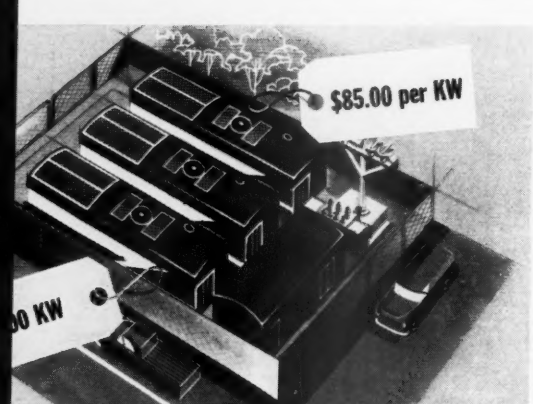
The secret of *quiet* in this amazing typewriter lies in its exclusive "pressure-printing" principle, induced by the merest tap of finger tips against the keys. For details on the REMINGTON NOISELESS, write for brochure RN8851 to Remington Rand, Room 1941, 315 Fourth Avenue, New York 10, New York.

Remington Rand

DIVISION OF SPERRY RAND CORPORATION

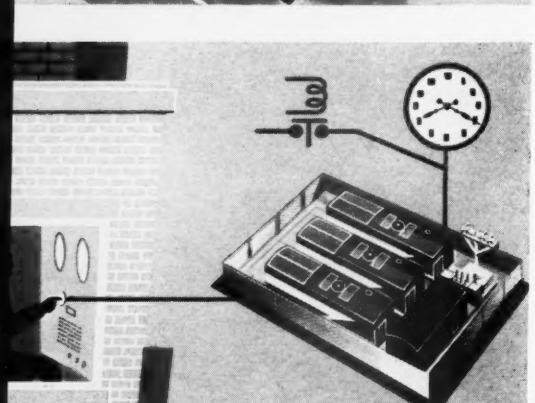
Electro-Motive 6000 KW

Product facts for your peaking plans—



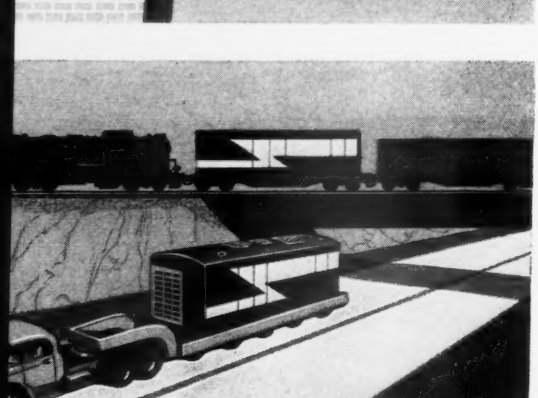
6000 KW at $85.00 per KW*

To perform economically its intended function, peaking equipment must naturally be low in original cost. Electro-Motive equipment meets this cost requirement. *F.O.B. Factory.



Unattended operation

The 6000 KW Peaking and Reserve Plant operates completely unattended. An electrical impulse is all that is needed—from a time clock, dispatcher, current or voltage sensing equipment or a combination of these methods.



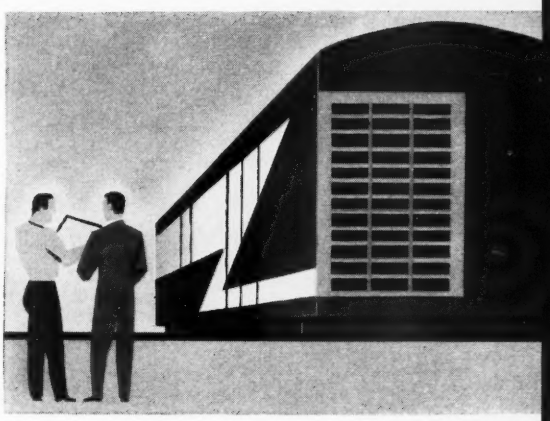
Readily transportable

The Electro-Motive Peaking and Reserve Plant is handled much the same way as many transformers. Components are shipped on standard rail cars or highway equipment.

Peaking and Reserve Plant

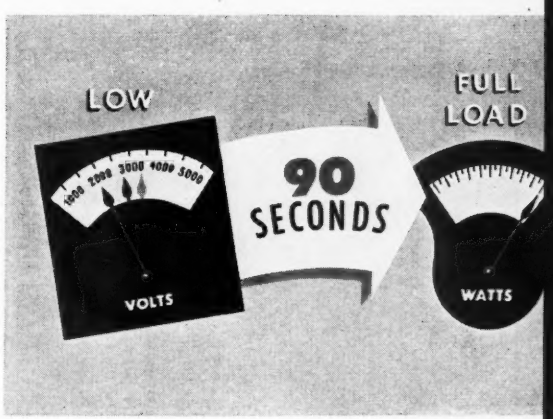
Quiet operation

Silencing arrangements are included to fit the varying conditions under which Electro-Motive Power must operate. Thus considerable freedom can be exercised in location of the equipment.



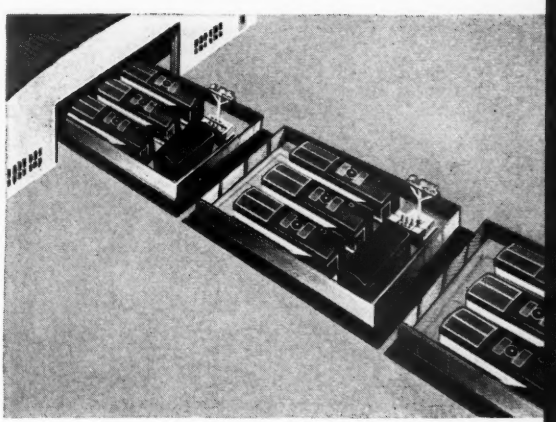
Quick start

The Electro-Motive Peaking and Reserve Plant starts instantaneously. In a matter of seconds it is on the line at full rating, thus fulfilling the requirement for spinning reserve.



One manufacturer

Electro-Motive Peaking Plants are designed, engineered, manufactured and serviced by Electro-Motive. There is only *one* manufacturing responsibility for the complete plant—starting from fuel input to power output.



ELECTRO-MOTIVE DIVISION · GENERAL MOTORS

LA GRANGE, ILLINOIS **Sales-engineering offices:** Chicago, New York, St. Louis, San Francisco *In Canada:* **General Motors Diesel Limited,** London, Ontario

Twofold Benefits From The

Analysts Journal

1. Its timely articles by the nations leading security analysts and economists keep you informed as to methods and trends in the security markets. You will be better able to present your company in its most favorable light if you know the trend of financial thinking as expressed in the official publication of the Security Analysts.

2. Its advertising pages provide a means of putting your story across to the Analysts. There is no more direct and effective way to contact this influential group of investment specialists than to advertise in their own quarterly Journal.

To Keep Abreast of Investment Markets

READ THE ANALYSTS JOURNAL

•

To Keep Investment Markets Abreast of Your Company

ADVERTISE IN THE ANALYSTS JOURNAL

PUBLISHED FIVE TIMES A YEAR BY THE NATIONAL FEDERATION OF FINANCIAL ANALYSTS SOCIETIES

THE ANALYSTS JOURNAL
444 Madison Avenue, Room 2004
New York 22, N. Y.

Gentlemen:

☐ *Please enter my subscription for one year at the subscription rate of $5.00—United States; $5.50—Canada.*

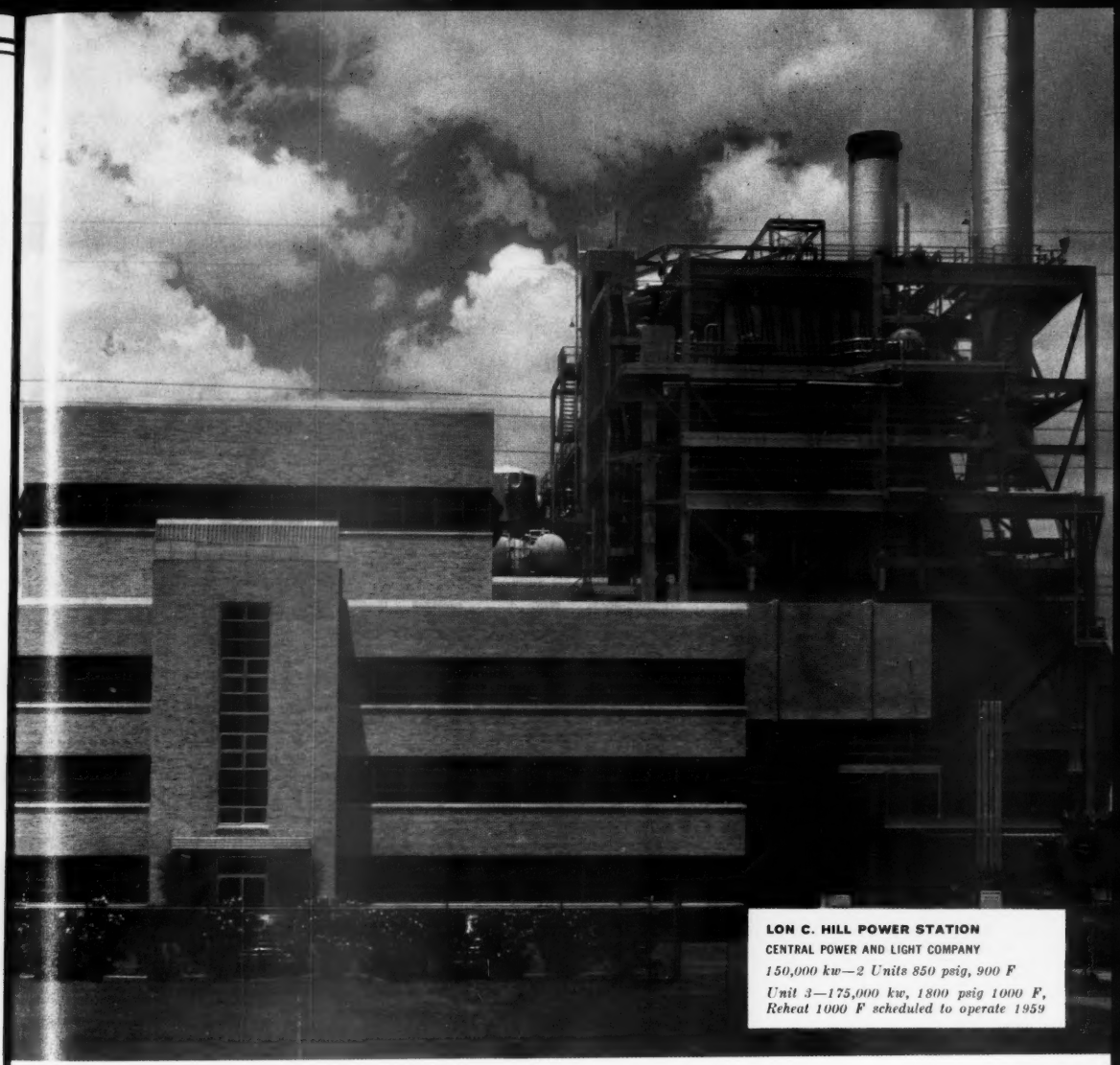
☐ *Please send me your advertising brochure.*

Name .....

Address .....

.....

.....



LON C. HILL POWER STATION
CENTRAL POWER AND LIGHT COMPANY
150,000 kw—2 Units 850 psig, 900 F
Unit 3—175,000 kw, 1800 psig 1000 F, Reheat 1000 F scheduled to operate 1959

Power in Texas...

million residents of the Lone Star State get their electric power from the Central Power and Light Company. The rapid growth of this utility has paralleled the industrial and economic development of the Rio Grande Valley and other parts of South Texas which this company serves. Through this program the company has consistently adhered to local architecture which is reflected in its attractive and economical plants. When the present authorized program is completed in 1960, the Central Power and Light Company will be able to supply nearly one million kilowatts of power to their customers in South Texas.

FULL COLOR BROCHURE outlining the scope of Sargent & Lundy services will be sent on request.

SARGENT & LUNDY
ENGINEERS

140 SOUTH DEARBORN STREET, CHICAGO 3, ILLINOIS

AN INFORMATIONAL PROGRAM FOR UTILITY EMPLOYEES

The P.U.R. Guide

► A new and different approach to the educational needs of utility employees — called THE P.U.R. GUIDE — is now being used by many companies. Somewhat descriptively, the GUIDE is referred to as "a journey of understanding." It takes the user through the economics of public utilities and through many other non-technical phases of utility operation. It was organized by and is issued under the general supervision of an experienced staff of specialists.

► THE P.U.R. GUIDE program is a systematically and consecutively arranged series of weekly lessons, in pamphlet form, offering a simplified, progressive, step-by-step story about the nature of the utility business, its important place in the American economy, the present conditions under which it is conducted, its day-to-day objectives and responsibilities, the existing problems with which it is confronted and other current subjects arising in connection with organization, financing, management, operation and regulation. This program adds guidance to experience in the development of the "management team."

Features of THE P.U.R. GUIDE

- ► 50 issues of 8 pages (one each week)
- ► Certificate of satisfactory completion
- ► Glossary of words and terms and complete index
- ► Ring binder embossed with enrollee's name
- ► Leader's Manual for group discussion
- ► Occasional reprints from Public Utilities Fortnightly
- ► Enrollments on company order only

Comments about THE P.U.R. GUIDE

One of the best educational programs we have had in years.
Division Manager

We all feel that this is a program that is needed in the public utility industry.
Vice President

I know of no better source for obtaining information it contains.
District Manager

I am sure that this new publication will prove of great value in the training of our younger personnel.
President

All of the men are interested and believe the studies to be quite worthwhile to them.
Division Manager

I am sure the total series of 52 will prove of inestimable value to the utility industry.
Vice President & General Manager

I would like to have received it twenty years ago.
Division Manager

We feel that THE P.U.R. GUIDE training program is being well received.
Training Coordinator

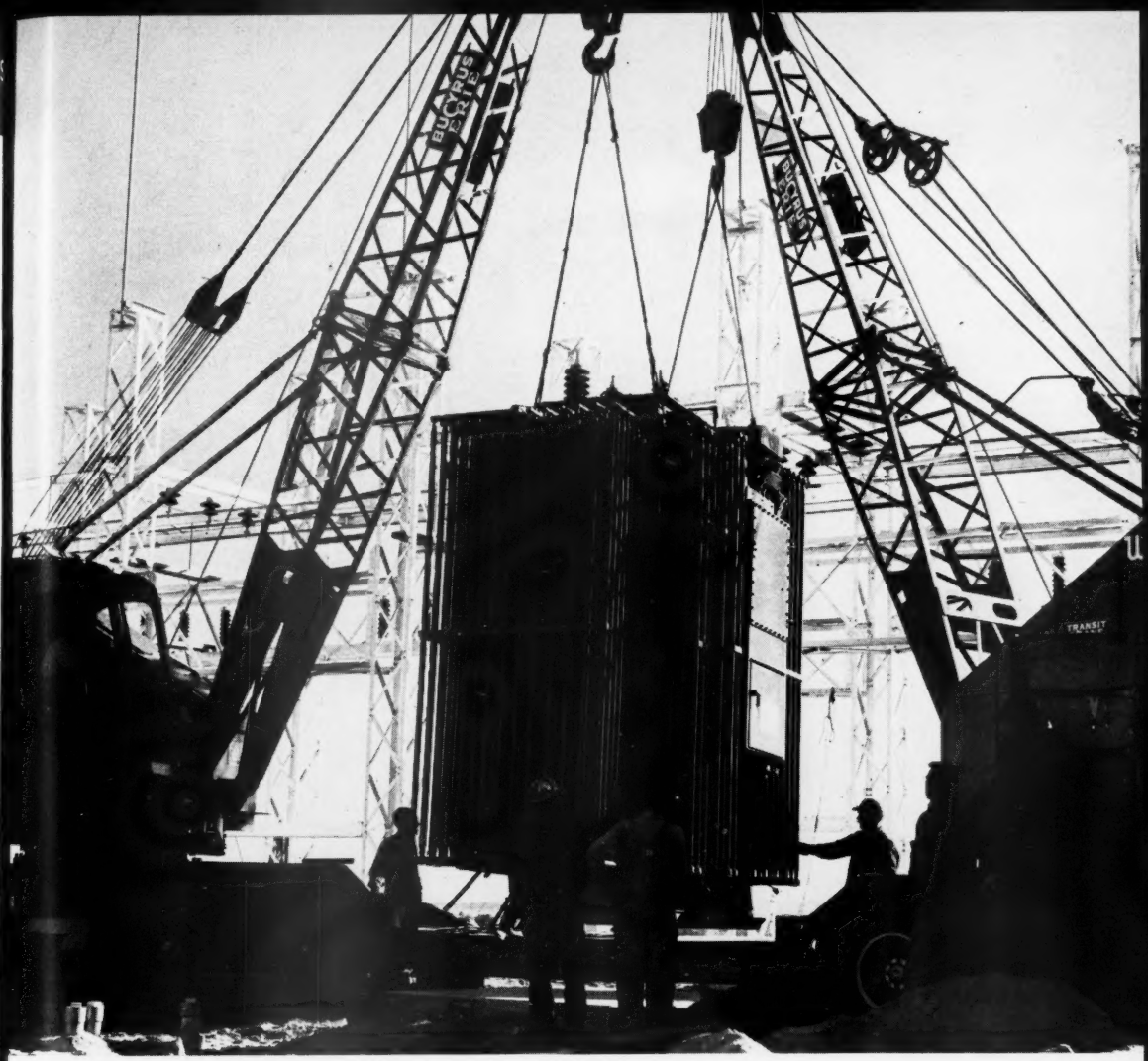
I find the material very interesting and instructive.
Division Manager

We are pleased we have had an opportunity to offer the course to our management people.
Employee Relations Department

Those in charge of employee education or training may obtain further information from:

PUBLIC UTILITIES REPORTS, INC., *Publishers*

332 Pennsylvania Building ● **Washington 4, D. C.**



RM standard-design medium transformers apply in 90% of the cases where "specials" seem to be indicated*

*Are unreviewed application practices costing you the savings offered by standardization of medium transformers (501 to 7500 kva, 69 kv and below)? 416-20

General Electric Co., Schenectady 5, New York.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Shown: New Dodge Tradesman—a pick-up with side locker

You get extra quality at no extra cost— Dodge is one of the low-priced 3!

You may be surprised to know, for instance, that a standard Dodge *Power Giant* V-8 pick-up costs $2.66 *less* than pick-up "F", and only $5.50 more than pick-up "C" . . . that a rugged Dodge *Power Giant* panel costs less than either panel "F" or panel "C"*. Yet Dodge *Power Giants* give you many more advantages, leading the low-priced three in all four important ways:

First in power! Discover the extra traffic pep and extra pulling power that you get from *Power Giant* V-8's, with up to 27.5% more power than competitive trucks.

First in payload! You'll find you get as much as ⅓ more payload per trip, because *Power Giant* construction adds extra strength without adding weight. You save trips, man-hours and fuel!

First in economy! In addition to low first cost you save with exclusive Dodge Power-Dome V-8 engine design that gives you extra gas mileage and reduces power-robbing carbon deposits.

First in styling! Your business gets a prestige bonus with a Dodge *Power Giant*. Its striking dual headlights, massive new grille and flowing, sculptured lines set new truck styling trends.

Despite all their advantages, Dodge trucks are priced with the lowest. So before you buy any truck look into these handsome, rugged new *Power Giants*. Compare *trucks*, and compare *prices*. See your Dodge dealer soon, and get his special 40th Anniversary deal!

**Based on official factory-suggested retail V-8 prices.*

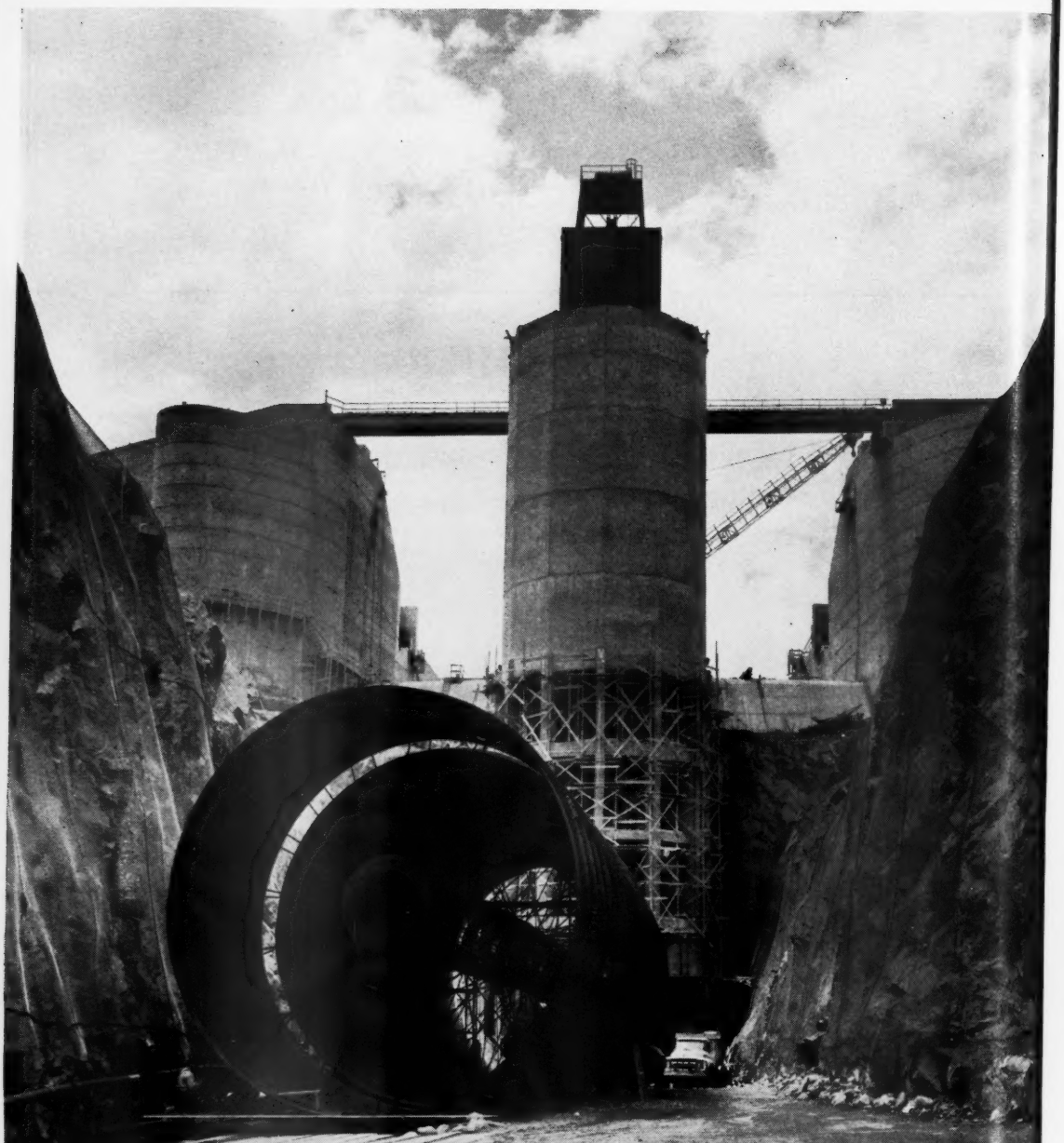
4-way leaders of the low-priced 3

DODGE *Power Giants*

UTILITIES *A·l·m·a·n·a·c·k*

SEPTEMBER

Thursday—11 *New England Gas Association begins safety conference, Boston, Mass.*	**Friday—12** *Maryland Utilities Association begins fall conference, Virginia Beach, Va.*	**Saturday—13** *International Conference on Peaceful Uses of Atomic Energy ends, Geneva, Switzerland.*	**Sunday—14** *Independent Natural Gas Association of America begins annual meeting, New Orleans, La.*
Monday—15 *American Water Works Association, Rocky Mountain Section, begins annual meeting, Denver, Colo.*	**Tuesday—16** *Arkansas Telephone Association ends two-day annual convention, Hot Springs, Ark.*	**Wednesday—17** *Southeastern Gas Association begins annual meeting, Raleigh, N. C.*	**Thursday—18** *Public Utilities Association of the Virginias begins annual meeting, White Sulphur Springs, W. Va.*
Friday—19 *Oklahoma Utilities Association, Gas Division, begins conference, Oklahoma City, Okla.*	**Saturday—20** *World Power Conference ends six-day international congress on large dams, New York, N. Y.*	**Sunday—21** *American Society of Mechanical Engineers, Power Division, will hold conference, Boston, Mass. Sept. 28-Oct. 1.* ***Advance notice.***	**Monday—22** *American Management Association begins personnel conference, New York, N. Y.*
Tuesday—23 *Louisiana Association of Broadcasters ends two-day meeting, Lafayette, La.*	**Wednesday—24** *International Gas Conference begins, Rome, Italy.*	**Thursday—25** *West Virginia Telephone Association ends two-day annual convention, Davis, W. Va.*	**Friday—26** *American Gas Association will hold annual convention, Atlantic City, N. J. Oct. 13-15.* ***Advance notice.***



Giant Power Takes Shape!

Dramatic shot of massive concrete spillway gate structure with 25 feet-in-diameter power tunnel cylinder, part of the Pacific Power & Light Company's 204,000-kilowatt hydroelectric project, to be completed this year on the Lewis river in southwestern Washington.

Public Utilities
FORTNIGHTLY

VOLUME 62 SEPTEMBER 11, 1958 NUMBER 6

Institutional Holdings Of Utility Securities

By OWEN ELY*

An analysis of the relative holdings of insurance and other institutional investors in various forms of public utility securities.

INSTITUTIONAL holdings of utility securities continue to increase rapidly, as the insurance companies and other institutions maintain their steady growth. The subject has been covered in past years in special articles which appeared in the FORTNIGHTLY of October 23, 1947, December 20, 1951, and September 10, 1953 (the latter by Holgar J. Johnson).[1]

Anyone familiar with the operations of Wall Street syndicates formed to bid competitively on utility bond and preferred stock offerings knows the great importance attached to the opinions of the buyers for the principal pension funds, insurance companies, and in some cases mutual funds. The firms heading the competing groups try to sound out the key buying men in these institutions regarding their attitude on a new issue, both as to possible prices and yields which would be

*Financial editor, PUBLIC UTILITIES FORTNIGHTLY. For additional note, see "Pages with the Editors."

[1] "Institutional Holdings of Utility Securities" by Owen Ely, Vol. XL, No. 9, October 23, 1947, p. 556; "Institutional Holdings of Utility Securities" by Owen Ely, Vol. XLVIII, No. 13, December 20, 1951, p. 886.
"The Life Insurance Investment in Public Utilities" by Holgar J. Johnson, Vol. LII, No. 6, September 10, 1953, p. 341.

considered attractive and (when market conditions are difficult) with regard to corollary features such as call provisions, sinking funds, etc. Thus during the adverse bond markets in the summer of 1957 the institutions insisted on special noncallable provisions for a period of years, so that they would not re-experience the quick redemptions which had occurred in a similar market a few years earlier. With the subsequent improvement in the bond market, however, such demands have become less exacting.

Facts and Figures on Institutional Holdings

UNFORTUNATELY there is no complete tabulation of institutional holdings, so that the data must be compiled from a number of sources. United Statistical Associates, Inc., publishes two large volumes annually which tabulate securities held, and recent purchases of securities, by over 1,000 insurance companies, pension funds, and related institutions. Regrettably the amounts held are not totaled, but a partial summary of these figures is prepared annually by the New York *Journal of Commerce* in a booklet, entitled "A Security Market Running into Billions." This shows the total amounts of bonds, preferred stocks, and common stocks of leading utility companies (and other corporations) owned by 175 leading life, fire, and casualty insurance companies. While these figures are not complete, the holdings probably represent a very substantial part of the industry total, especially with respect to senior securities. Hence, it may be of interest to compare the percentage of total outstanding securities of leading utilities which were held by these institutions. The results are shown in the accompanying table, page 363.

It will be noted that relatively small percentages of common stock are held—due primarily to legal limitations on the purchase of common stocks by insurance companies. While these restrictions have been broadened in recent years they are still an important factor. However, as discussed later, substantial amounts of common stocks are held by other types of institutions, such as mutual funds, investment trusts, college endowment funds, foundations, etc.

As shown in the table, the percentages of senior securities held by these life insurance companies are much larger, ranging from 4 to 69 per cent of the outstanding bonds, and 5 to 38 per cent of the outstanding preferred stocks. Southwestern Public Service, due to its practice of placing many securities privately with institutions (rather than through public security offerings) has 69 per cent of its funded debt in the hands of these 175 life insurance companies. In the case of the largest utility company, American Telephone and Telegraph Company, with outstanding parent company debt of $2,400 million, over half a billion bonds were held by the leading insurance companies.

The Institute of Life Insurance recently issued its 1958 *Fact Book,* giving data as of December 31, 1957. Total assets of the legal reserve life insurance companies totaled $101 billion, and of this amount $15.3 billion or about 15 per cent was invested in public utility bonds. As shown in the historical table, page 365, in 1917 less than 2 per cent of assets were in utility bonds, the amount held being only $113 million. By 1930 holdings had increased to

$1.6 million or 8.6 per cent of assets. In 1945 the amount was $5.2 billion or 11.6 per cent. In the postwar period holdings have nearly tripled, now amounting to 15.1 per cent of assets.

As mentioned above, stock holdings of life insurance companies are relatively small, detailed figures for utility holdings being available only since 1947. Present holdings of utility securities compare with those of a decade ago as follows (in millions):

Year	*Bonds*	*Preferred Stocks*	*Common Stocks*
1947	$ 6,734	$302	$ 73
1957	14,661*	878	464

*Excluding foreign utilities.

What proportion of all outstanding utility securities was held last year by the life insurance companies? Figures for total outstanding utility securities are not compiled but may be estimated roughly as follows, in billions:

	Bonds	*Preferred Stocks*	*Common Stocks*	*Total*
Electric Utilities ...	$17	$4	$12	$33
Gas Utilities	5	1	4	10
Telephone Companies	7	1	11	19
*Total	$29	$6	$27	$62

*Transit, water, and miscellaneous utilities not included.

Assuming that the above figures are approximately right, it appears that the insurance companies hold more than half of all utility bonds, about 15 per cent of the preferred stocks, and less than 2 per cent of the common stocks.

DURING the year 1957 purchases of utility securities by U. S. life insurance

PERCENTAGES OF TOTAL OUTSTANDING SECURITIES OF ELECTRIC UTILITIES HELD BY 175 INSURANCE COMPANIES

	Bonds	*Preferred Stocks*	*Common Stocks*
American Telephone & Telegraph	21%*	—	1%
Atlantic City Electric	8	21%	2
Baltimore Gas & Electric	4	8	6
Central Hudson Gas & Electric	27	25	—
Central Illinois Light	13	7	6
Cincinnati Gas & Electric	24	5	7
Columbus & Southern Ohio Electric	21	9	—
Commonwealth Edison	28	7	3
Connecticut Light & Power	5	23	3
Dayton Power & Light	6	22	7
Duke Power Co.	9	—	1
Florida Power Corp.	23	38	2
Idaho Power Co.	17	6	10
Illinois Power Co.	25	23	2
Iowa-Illinois Gas & Electric	15	20	4
Kansas Power & Light	32	25	2
Long Island Lighting	35	34	1
Louisville Gas & Electric	5	—	2
Niagara Mohawk Power	4	16	3
Northern Illinois Gas	7	8	2
Northern Indiana Public Service	49	14	1
Pacific Gas & Electric	30	15	2
Pacific Telephone & Telegraph	21	6	—
Public Service of Indiana	12	17	4
Public Service Electric & Gas	20	34	3
Southwestern Public Service	69	29	1
Tennessee Gas Transmission	23	6	—

*Parent company debt only.

companies were in the following relationship to total new issues:

	Bought by Life Insurance Cos.	*Total New Issues*	*Ratio of Insurance Purchases*
Bonds	$937	$4,047	23%
Preferred Stocks	24	277	9
Common Stocks .	50	627	8
Totals	$1,011	$4,951	20%

These figures seem to indicate that the insurance companies last year bought a considerably smaller proportion of the new bond issues than they normally do. In 1956 total bond offerings were $2,151 million and the life insurance companies bought $935 million—although the latter figure includes Canadian and foreign purchases and hence is not strictly comparable.

It should be noted that the figures used above do not include the important fire, casualty, and miscellaneous insurance companies which are also buyers. While exact and comprehensive figures for all insurance companies are not available, it is obvious that the insurance industry is a strong bulwark for utility financing.

A BREAKDOWN of the life insurance company holdings of utility bonds was presented in the 1958 *Fact Book,* issued by the Institute of Life Insurance.

"An analysis of public utility bond holdings of U. S. life insurance companies, as of the end of 1955, showed that 55 per cent of the total was in securities of power and light companies. Gas utilities and natural gas pipelines made up 23 per cent of the holdings, and communications 18 per cent. Private water companies, local transit, and miscellaneous utilities made up the balance [4 per cent] of the 1955 public utility bond portfolio."

THE *Wall Street Journal* publishes a weekly table based on reports by 33 large life insurance companies, showing the investments made currently in mortgages and various types of securities. In the thirty weeks ended July 25th these companies purchased $340 million utility bonds and $45 million utility preferred and common stocks. Utility bonds represented 5.1 per cent of the investments made during this period (which totaled $6,656 million) and preferred and common stocks 0.7 per cent. In the corresponding period of 1957, $354 million of utility bonds had been purchased and $21 million in stocks.

Investment Companies

THE "mutuals" or open-end investment companies, together with the earlier closed-end trusts, play a somewhat similar institutional rôle in the purchase of utility common stocks as do the insurance companies with bonds and (in lesser degree) preferred stocks. However, the relationship of the mutuals' purchases to the amount of new equity financing is less clean-cut, since a substantial part of utility common stock offerings are sold on a rights basis to stockholders, and the investment companies may buy much of their utility holdings in the open market rather than by concentrating on new offerings.

Vickers' *"Guide to Investment Company Portfolios"* tabulates the holdings of some 287 mutual funds, closed-end trusts, holding companies, savings plans, etc., with total assets of $15.4 billion. Unfortunately individual utility holdings are not totaled and it would be impossible to calculate the aggregate holdings of util-

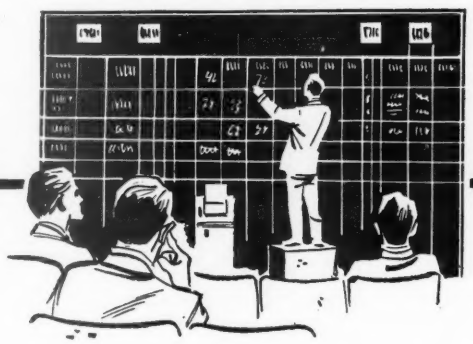
INSTITUTIONAL HOLDINGS OF UTILITY SECURITIES

DISTRIBUTION OF ASSETS OF U. S. LIFE INSURANCE COMPANIES

Amount
(000,000 Omitted)

Year	U. S. Govt. Securities	Foreign Govt. Bonds	State, Provincial & Local Bonds	Railroad Bonds	Public Utility Bonds	Industrial & Misc. Bonds	Stocks	Mortgages	Real Estate	Policy Loans	Miscellaneous Assets	Total
1917 ...	$ 70	$ 163	$ 329	$1,813	$ 113	$ 49	$ 83	$ 2,021	$ 179	$ 810	$ 311	$ 5,941
1920 ...	830	169	350	1,775	125	49	75	2,442	172	859	474	7,320
1925 ...	627	154	530	2,238	687	97	81	4,808	266	1,446	604	11,538
1930 ...	319	160	1,023	2,931	1,631	367	519	7,598	548	2,807	977	18,880
1935 ...	2,853	189	1,685	2,625	2,114	575	583	5,357	1,990	3,540	1,705	23,216
1940 ...	5,767	288	2,392	2,830	4,273	1,542	605	5,972	2,065	3,091	1,977	30,802
1945 ...	20,583	915	1,047	2,948	5,212	1,900	999	6,636	857	1,962	1,738	44,797
1950 ...	13,459	1,060	1,547	3,187	10,587	9,526	2,103	16,102	1,445	2,413	2,591	64,020
1954 ...	9,070	481	2,549	3,757	13,511	16,926	3,268	25,976	2,298	3,127	3,523	84,486
1955 ...	8,576	410	2,696	3,912	13,968	18,179	3,633	29,445	2,581	3,290	3,742	90,432
1956 ...	7,555	357	3,011	3,877	14,520	19,787	3,503	32,989	2,817	3,519	4,076	96,011
1957 ...	7,029	332	3,163	3,863	15,252	21,717	3,391	35,236	3,119	3,869	4,338	101,309
						Percentage						
1917 ...	1.2%	2.8%	5.6%	30.5%	1.9%	.8%	1.4%	34.0%	3.0%	13.6%	5.2%	100.0%
1920 ...	11.3	2.3	4.8	24.3	1.7	.7	1.0	33.4	2.3	11.7	6.5	100.0
1925 ...	5.4	1.3	4.6	19.4	6.0	.8	.7	41.7	2.3	12.5	5.3	100.0
1930 ...	1.7	.9	5.4	15.5	8.6	1.9	2.8	40.2	2.9	14.9	5.2	100.0
1935 ...	12.3	.8	7.3	11.3	9.1	2.5	2.5	23.1	8.6	15.2	7.3	100.0
1940 ...	18.7	1.0	7.8	9.2	13.9	5.0	2.0	19.4	6.7	10.0	6.3	100.0
1945 ...	45.9	2.1	2.3	6.6	11.6	4.3	2.2	14.8	1.9	4.4	3.9	100.0
1950 ...	21.0	1.7	2.4	5.0	16.5	14.9	3.3	25.1	2.2	3.8	4.1	100.0
1954 ...	10.7	.5	3.1	4.5	16.0	20.0	3.9	30.7	2.7	3.7	4.2	100.0
1955 ...	9.5	.4	3.0	4.3	15.5	20.1	4.0	32.6	2.9	3.6	4.1	100.0
1956 ...	7.9	.4	3.1	4.0	15.1	20.6	3.7	34.4	2.9	3.7	4.2	100.0
1957 ...	6.9	.3	3.1	3.8	15.1	21.5	3.3	34.8	3.1	3.8	4.3	100.0

Sources, Spectator Year Book and Institute of Life Insurance



ity securities by these institutions without many man-hours of statistical work. However, it may be possible by a "sampling" method to derive some conclusions. Thus we find that as of December 31, 1957, the investment companies held the following percentages of certain utility common stocks outstanding (holdings of bonds and preferred stocks were relatively small):

American Electric Power	4.3%
American Natural Gas	10.7
American Tel. & Tel.	2.5
Arizona Public Service	8.4
Atlantic City Electric	3.9

Baltimore Gas & Electric	2.0
Boston Edison	1.0
Brooklyn Union Gas	6.4
California Electric Power	7.5
Central & South West	10.9
Central Illinois Public Service	7.7
Consolidated Edison	4.8
Florida Power & Light	12.5
Florida Power Corp.	15.3
General Telephone Corp.	4.2
Houston Lighting & Power	3.4
Pacific Gas & Electric	4.4
Southwestern Public Service	4.7
Texas Utilities	8.1

ARTHUR WIESENBERGER & Co. compiles a current service showing the "Stocks Most Favored by Leading Investment Companies." The latest tabulation, dated July 25, 1958, lists the five largest holdings of each of the 24 investment companies having assets of over $100 million. It may be of interest to list the utility companies in this tabulation. (See table, page 367.)

Wiesenberger also published (as of July 25th) a tabulation of principal purchases and sales by investment companies. Utilities purchased during the second quarter by leading investment companies were the following:

Arkansas Louisiana Gas
General Telephone
International Tel. & Tel.
Montana Power
Pioneer Natural Gas
Texas Utilities
Virginia E. & P.
Central Illinois Public Service
Columbus & S.O.E.
Long Island Lighting
New England Electric System
Northern Indiana P.S.
Houston Lighting
Tennessee Gas Transmission
American Tel. & Tel.
New York State E. & G.
Arizona Public Service
Mississippi Fuel
Public Service E. & G.
Atlantic City Electric

IN its annual book *"Investment Companies, 1958,"* Wiesenberger lists the "Favorite 50" stocks owned by investment companies as of December 31, 1957. The tabulation was compiled by Vickers Brothers and is based on the holdings of 225 investment companies. These 50 stocks included about one-fifth of the companies' total investments. The list included the following utilities:

	% of Utility's Outstanding Stock Held
Central & South West	11%
Texas Utilities	8
General Public Utilities	11
Southern Company	8
Florida Power & Light	11
Middle South Utilities	14
American Tel. & Tel.	0.4
American Electric Power	4

The book tabulates the individual holdings of utility stocks of the various funds but does not present any general summary of utility holdings, other than that given above.

Colleges and Universities

A COMPREHENSIVE study of 63 college and university endowment funds at June 30, 1957, has been prepared by Boston Fund. The investments of these colleges totaled over $3 billion, made up as follows:

Cash	1%
Bonds	30
Preferred Stocks	4
Common Stocks	55
Real Estate and Mortgages	7
College Plant, etc.	3
	100%

The common stock holdings of 13 college funds with total endowments of $1 billion were examined. Of these, the percentage of total investments placed in utility stocks ranged from 4.8 per cent for the University of Virginia to 18.7 per cent for Drew College. Unfortunately, an average for all the schools was not worked out.

but this would probably approximate 11 per cent of the total funds and roughly 15-20 per cent of the common stock holdings. In the case of the largest fund—Harvard University with over half a billion endowment—the percentage of assets in utility common stocks was 16.1 per cent, and the proportion of all common stocks was 27 per cent.

TURNING to the individual utility stock holdings (which do not include telephone and gas stocks), following were the holdings:

	No. of Colleges Owning Security	*Market Value June 30, 1957 (Millions)*
Commonwealth Edison	10	$2.0
Middle South Utilities	9	6.6
Niagara Mohawk Power	9	4.4
Central & South West	9	2.8
Virginia Electric & Power	9	6.6
Consumers Power	8	3.7
American Gas & Electric	8	3.3
Cleveland Electric Illuminating	8	2.8
Texas Utilities	8	1.2
Southern California Edison	7	3.8
Houston Lighting & Power	6	2.0
Florida Power & Light	5	3.6
Illinois Power	5	3.0
Idaho Power	5	3.0
New York State Electric & Gas	5	1.7

Pension Funds

THE pension funds are a remaining division of the complex institutional field. They have grown extremely rapidly and apparently now have a total of $34 billion assets, according to a recent article in *Business Week*. Of this amount some $14 billion are handled by insurance companies and presumably invested largely in bonds. The SEC's Release No. 1533 gives a recent breakdown of the remaining $20 billion, many of which are administered by banks. They are invested roughly 10 per cent in government bonds, 48 per cent in corporate bonds, 30 per cent in common stocks, and 12 per cent in miscellaneous investments.

The common stock portfolio of $6 billion includes some $860 million (14 per cent) in stocks of companies which buy their own equities for their pension funds. No details are available regarding the character of the common stock holdings, but undoubtedly the pension funds play an active rôle in the stock market, especially with respect to so-called "blue chips" and "growth stocks." Of the total pension fund assets covered by the SEC report

Investment Company	*Utility Stock Holding*	*Market Value (Mill.)*	*% of Total Investments*
Investors Mutual	El Paso N.G.	$11.0	1.0
Wellington Fund	Amer. Tel. & Tel.	20.6	2.9
Affiliated Fund	Panhandle Eastern	9.0	2.1
Investors Stock Fund	Arkansas Louisiana Gas	4.6	1.5
" " "	El Paso N.G.	3.3	1.1
United Income Fund	South Carolina E. & G.	2.4	1.4
Television-Electronics	Amer. Tel. & Tel.	5.4	3.2
State Street Investment	Niagara Mohawk	7.1	4.4
" " "	Middle So. Utilities	6.7	4.1
" " "	Amer. Tel. & Tel.	6.3	3.9
George Putnam Fund	Florida P. & L.	3.2	2.1
" " "	Florida Power Corp.	2.3	1.5
Tri-Continental	Florida P. & L.	8.5	2.5
" "	Amer. Elec. Power	7.4	2.2
Lehman Corp.	Amer. Tel. & Tel.	5.5	2.4

about 5 per cent are related to utility companies.

Foundation Holdings

A REMAINING institutional group with fairly large stock holdings are the charitable and educational foundations, with combined assets of $4 billion or more. So far as the writer is aware, there is no general tabulation of the investment holdings of these funds. The huge Ford Foundation, as of September 30, 1957, held $49 million utility bonds, but no utility equities, all its common stock investment (over a billion dollars) being in Ford Motors "A" stock. The Rockefeller Foundation, with assets of $660 million at the end of 1956, held only $4 million utility bonds (out of $92 million total) and only about $20 million of utility stocks—the bulk of its $559 million stock investments being in Standard Oil stocks. The smaller funds doubtless have more diversified stock portfolios. While the foundations do not seem especially important as a source of utility funds, they doubtless supplement the investment companies' funds in the equity field.

Holdings of Banks

THUS far no reference has been made to bank holdings of utility securities. This is a difficult field to explore. According to the 1955 figures for all banks, total assets were $243 billion, of which $6.2 billion were invested in corporate bonds and $1.1 billion in stocks (including the stocks of the Federal Reserve banks). Thus the banks, while moderately important in connection with utility bonds, probably have relatively small holdings of utility stocks. However, savings banks in some states are now permitted to buy good stocks with a fair degree of discretion, and in time may become more of a factor in the new issue market.

"JUST *what does industry regard as a desirable climate? Does it want special favors, special privileges, special treatment? I assure you that industry is not looking for special advantages either on the state or on the national level. Yet by the same token, industry feels that it should not be exposed to special penalties, special harassments, nor special burdens either.*

"Unfortunately, there is a tendency in some quarters to think of the corporate citizen as an inanimate object which can be prodded without pain and which can be attacked without actually harming anyone. And when the corporation in question is a large one, its vulnerability in this respect increases proportionately.

"The fact is that a corporation is not an inanimate being. It is simply a group of people joined together to do something that they cannot do as individuals. A large corporation—or what we call big business—is simply a larger group of people who have pooled their skills, their labor, and their funds to do something which a smaller group could not do. But, large or small, the corporation is people and, if these people are penalized in their collective rôle as a corporation, they are, at the same time, penalized as individuals."

—HENRY B. DU PONT,
Vice president, E. I. du Pont de Nemours & Company

Co-operation In Power

By STAN REED*

An account of a unique regional partnership between previously hostile "public" and "private" electric utility agencies which could be a basis for co-operation in other parts of the country. At least it contains suggestions as to the possibilities.

THE national war over controversial merits of "public" and "private" power has been waged for decades. No clear-cut victory has been won by the political and economic factions arming the opposing camps. Consumers continue to pay for the wasteful competition in increased costs and, in some instances, inadequate power supplies.

But one significant victory was achieved in Washington state in April, 1954, when the Puget Sound Utilities Council was formed. This unprecedented merger of former rivals and enemies has marked a new era in co-operation between public and private suppliers of electric power. And it could serve as a pattern for similar successful co-operation throughout the nation.

The unique partnership is among five parties—two municipal systems, a private utility company, and two county systems. They are Seattle City Light, Tacoma City Light, Puget Sound Power & Light Company, Snohomish County Public Utility District, and Chelan County Public Utility District.

Has this novel co-operative venture been successful during the past four years? It decidedly has, in terms of benefits to both the general public and the participating organizations.

THE following are four major benefits the general public has realized from the co-operative efforts of the Puget Sound Utilities Council:

1. Assurance of an ample supply of low-cost power for all present and future industrial, business, and residential needs in the area served by the council's five members.

2. Conservation of water supplies to guarantee maximum production—and use—of power from available resources.

*Industrial editor, *Seattle Post-Intelligencer*, Seattle, Washington. For additional personal note, see "Pages with the Editors."

3. Construction of new power projects when needed, not when made possible by legislative appropriations.

4. Stimulation of regional co-operation which will result in continued economic development of Washington state's Puget Sound region.

Council Accomplishments

LET us consider these primary benefits in detail.

The council, headquartered in Seattle, embarked on its co-operative power program in 1954 with the declared aim: "To take care of the total electric power needs of the area for all purposes—including its industrial growth."

The council is fulfilling this pledge to consumers. It is moving ahead on a 12-year program calling for expenditure of a billion dollars to meet the area's power needs.

The investment will provide new generation, transmission, and distribution facilities by 1969 which will have a capacity that will guarantee the council's ability to "take care of the total electric power needs of the area."

ON September 5, 1956, the Puget Sound Utilities Council established the Puget Sound-Cascade Power Pool to accomplish another of its objectives, the maximum economic use of facilities and conservation of water supplies "so that the area's electric power requirements will be provided at the lowest possible cost."

The pooling arrangement has resulted in an interchange and conservation of regional resources, through more effective use of the area's storage reservoirs and of river flow which otherwise would not be used.

There are many examples of how the pool functions to save excess "cloudburst" water that otherwise would be wasted and to conserve critical water supplies. Here are three:

Less than three weeks after the pool was formed, heavy rains above Seattle City Light's Ross and Diablo dams on the Skagit river increased stream flows in excess of the system's demands.

Through arrangements made by the pool's co-ordinator-dispatcher in Seattle, the power which would have been no more than extra water over the dams was wheeled over transmission lines of two council members—Puget Sound Power & Light Company and the Chelan County Public Utility District—to eastern Washington utilities.

The utilities receiving the surplus power were able to reduce their generation and to store water needed for critical winter months in Grand Coulee reservoir and in Montana's Flathead Lake.

In a two-day period, nearly a million kilowatt-hours of energy which normally would have been wasted were saved. And Seattle City Light earned additional revenue.

The pool had made it possible to sell a cloudburst.

IN another case, through the co-operation of the Army Engineers, stream flow at the Chief Joseph dam on the Columbia river was adjusted to enable the Chelan County PUD's downstream Rock Island generators to produce as much as 150,000 additional kilowatt-hours daily during a two-month period. The extra power helped the council members meet demands during

the period, while conserving other resource for future use.

Here is a third example: At both Chelan PUD's Rock Island and Puget Power's Baker river power plants, water which otherwise would be spilled during the night, when demand for power drops, is used to develop nighttime power for Seattle City Light and Tacoma City Light.

The municipal utilities, in turn, store water at their reservoirs to meet later daytime demand. All participating utilities, and their customers, benefit from this pooling arrangement.

In the first year of the council's power pool operation, savings and earnings to member utilities exceeded $500,000. This was approximately eight times the cost of the council's entire annual budget.

The pool has been a good investment for council members. But, of even more importance, it has resulted in maximum power from the area's facilities and resources. And it has meant continued savings for consumers.

Co-operation to Keep Costs Low

THE Pacific Northwest leads the nation in residential use of electric power—at the lowest cost per kilowatt-hour.

The average annual residential load is 8,000 kilowatt-hours compared with a national average of 3,000 kilowatt-hours. Cost per kilowatt-hour is 1.1 cents, compared with 2.6 cents for the nation.

This low-cost residential power largely is the result of the area's generating capacity being 90 per cent hydro and 10 per cent thermal, whereas for the nation as a whole 79 per cent is thermal and 21 per cent is hydro. But the co-operative activities of the Puget Sound Utilities Council assure the area that costs will be kept low even in the future when a greater percentage of electric power will be produced with thermal—and atomic—energy.

Research for the Future

THE council is investigating the economic feasibility of steam-electric generation in conjunction with hydroelectric resources. In 1955 the council organized an atomic study group, which has access to certain classified information provided by the Atomic Energy Commission.

The atomic study group has enabled council members to keep abreast of developments in the rapidly changing atomic

¶ FRANK MCLAUGHLIN, *president of Puget Sound Power & Light Company, reports, "The people of the Puget Sound-Cascade area look with great favor on the council utilities squarely facing up to their responsibilities. This is strongly evidenced by the enthusiastic endorsements and widespread support from the press and people of the area with respect to the council's enlightened partnership, whereby through co-operative endeavor it is sought to provide adequate power at the lowest possible cost and to foster the civic progress and economic growth of the area."*

power field so they will be able to utilize atomic power as soon as it is practical and competitive with other available power sources in the area.

THIS joint research effort by the council members is an example of how the Puget Sound Utilities Council provides a forum for the exchange and interpretation of ideas and information. All five members benefit from the experiences of any one member—and any one member profits from the experiences of all five members.

This merger of the five utilities is much more than a pooling of electric power. It is a pooling of effort, problems, experience, ideas, talent, and resources.

More than this, it is a healthy change in attitude. The five utilities have quit feuding. They have recognized the fact that all along they had been working toward the same goal—the development of power resources to provide more power at low cost. Since April, 1954, they have continued to work toward this objective, co-operatively.

This joint venture in no way represents a power monopoly. It was not designed for that purpose and could not achieve it even if it had been.

WHEN the council was formed, it stated in a "declaration of objectives" that the organization "is a co-operative undertaking for the common good and has power to act only as the governing bodies of its participating utilities may authorize." It has strictly abided by that definition. Council chairmanship is rotated among the five member utilities on an annual basis.

The council also stated in its declaration of objectives:

> These utilities believe their plans can be dovetailed into any broader regional resource development programs which may be undertaken by other agencies and it is not proposed to assume the functions of any other entity or existing interrelated group, such as the Northwest Power Pool.

Each of the five members of the council has its own fields of activity and service. As far as their customers are concerned, they are competitors today just as much as they were five years ago. And the five utilities have actively continued their competition for new markets—with one significant difference.

Today they help each other where it is of most importance to them and to their customers. They have co-ordinated and integrated their research, planning, construction, and distribution projects. This has meant that waste has been reduced and efficiency has been increased.

The line of demarcation between public and private utilities no longer is clear and sharp in the Puget Sound region, thanks to the Puget Sound Utilities Council. This may be disturbing to the nation's competing power blocs. But it cannot be ignored, even by partisan administrations. A new era in electric utility co-operation has arrived in the Puget Sound region of Washington state. And it has been watched—and applauded—by the nation.

Council's Efforts Praised

WHEN he was Secretary of the Interior, Douglas McKay congratulated the Puget Sound Utilities Council. He said:

> I firmly believe that such active and

Co-operation in Research, Too

"THE council is investigating the economic feasibility of steam-electric generation in conjunction with hydroelectric resources. In 1955 the council organized an atomic study group, which has access to certain classified information provided by the Atomic Energy Commission. . . . This joint research effort by the council members is an example of how the Puget Sound Utilities Council provides a forum for the exchange and interpretation of ideas and information. All five members benefit from the experiences of any one member—and any one member profits from the experiences of all five members."

responsible interest on the part of the local utilities can be of the greatest value to the Northwest. Your positive action is the very best for the good of the Northwest.

And it may prove to be "the very best" for the nation as a whole. The trail has been blazed by these power pioneers.

IT is appropriate that this new concept of mutual assistance and co-operation between public and private electric utilities should have been born in the far northwest corner of the United States—the country's youngest area, where the pioneering spirit still is vigorous.

The area was the nation's last land frontier. Now it is the country's first power frontier.

THERE is a second reason why the area was a natural site for the emergence of this new philosophy of region-wide, coordinated development of power resources at the lowest possible cost. It is the nation's primary powerhouse.

Jack D. Stevens, consulting engineer for the Puget Sound Utilities Council, has said Washington state's Columbia river

"is, without doubt, the most important power stream on the North American continent."

Stevens is well qualified to judge power resources, and the Columbia river in particular. He is a career power man. And he has an intimate knowledge of the Columbia river.

After attending Oregon State College and the University of California, he began his life's work with the Pacific Gas and Electric Company in California. Before occupying his present post with the Puget Sound Utilities Council, he was chief of the Bonneville Power Administration's branch of power resources.

In this capacity he was responsible for all hydraulic operations of the federal power system on the Columbia river.

Stevens provided graphic evidence of the Columbia river's pre-eminence as a source of power. He said the river drains a total of 259,000 square miles—220,000 square miles in the United States and 39,000 square miles in Canada.

"This is equal in area to the 12 states of Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Virginia," he said.

THE Columbia river's average annual runoff at the Canadian border is 62 million acre-feet, he said. At the river's mouth at the southwest corner of Washington state, average annual runoff is 180 million acre-feet.

"The Columbia river drains the major share of Washington, Oregon, Idaho, and western Montana," Stevens said. "It also drains parts of Wyoming, Utah, Nevada, and British Columbia."

The Columbia river's drainage area is only 6 per cent larger than the Colorado river's, yet its average annual runoff is ten times greater, he said.

Big Job Still Ahead

THE mighty Columbia is a vigorous natural power with a vast potential for the industrial, economic, and social betterment of the area it serves electrically.

It is a worthy silent partner of the Puget Sound Utilities Council, which holds much promise for the entire nation in its rôle as a pioneer in the new power movement.

A pioneer's life never is an easy one, and is not expected to be. Though the difficult job of establishing itself in the wilderness of a new power frontier was accomplished in April, 1954, the council still has a lot of ax swinging left to achieve its ambitious objectives. And the job is getting bigger every year.

When the council was formed, it estimated that "the healthy economic growth of the Puget Sound-Cascade area will require around 1.6 million kilowatts of additional electric power during the next ten years, involving estimated capital outlays in excess of half a billion dollars."

The council's present 12-year power development program adopted in 1957 calls for expenditure of "not less than" a billion dollars for new generating, transmission, and distribution facilities by 1969.

The 19-point program includes investigation of 2.3 million kilowatts of new generation, construction of projects with an installed capacity of more than a million kilowatts, and proposed development of Canadian storage on the Columbia river.

The proposed Mica Creek storage proj-

ect on the Columbia river in British Columbia has been described by the council as "by far the most significant storage development possible in the Northwest." The project would create 10 million acre-feet of usable storage—more than twice the amount at Grand Coulee—for use by British Columbia and United States power plants on the Columbia river.

Financial Bottlenecks Ended

THE Puget Sound Utilities Council has eliminated a major problem that faces both public and private utilities operating in the customary manner.

Federally financed power projects do not always progress from planning to construction as fast as they should. Delays result from the inevitable wrangling for legislative appropriations. Private power projects also are subject to delays. Financing often has been a major obstacle to getting needed projects under way.

The Puget Sound Utilities Council, through co-operation, has done away with this financial bottleneck. It has found the way to construct new power projects when they are needed, rather than after they have been tardily subsidized.

A gigantic $250 million power project under construction on the Columbia river is striking proof that the council members have solved this problem. The Rocky Reach dam is being built by the Chelan County Public Utility District. How was this small, publicly owned utility able to finance a project to the tune of a quarter of a billion dollars? Primarily through the co-operation of its large, privately owned partner, the Puget Sound Power & Light Company.

Puget Power contracted to buy 50 per cent of all power produced at Rocky Reach for fifty years. As a result of this ready-made private market for public power, Chelan was able to raise the necessary capital through the sale of revenue bonds to investment brokers.

WHAT this amounts to is that a public power project has been subsidized by private power.

Puget Power, though the major subsidizer, was not the only one. The other 50 per cent of output was contracted for by the Aluminum Company of America, which took 23 per cent; Portland General Electric Company, 16 per cent; Pacific Power & Light Company, 7.1 per cent;

¶ "THE *national war over controversial merits of 'public' and 'private' power has been waged for decades. No clear-cut victory has been won by the political and economic factions arming the opposing camps. Consumers continue to pay for the wasteful competition in increased costs and, in some instances, inadequate power supplies. But one significant victory was achieved in Washington state in April, 1954, when the Puget Sound Utilities Council was formed. This unprecedented merger of former rivals and enemies has marked a new era in co-operation between public and private suppliers of electric power.*"

and Washington Water Power Company, 3.9 per cent. Some of this power is sold on a "pull-back" basis and can be withdrawn for use as needed by Chelan.

Rocky Reach is a large project, in capacity as well as investment. It will have an initial installed capacity of 710,000 kilowatts and eventually will produce more than one million kilowatts. Construction was started in 1956 and the first generators are scheduled for operation in late 1961.

This co-operative venture has disproved the belief, long a favorite of public power adherents and accepted by supporters of private power, that huge dam projects must be financed by the government. It should light the way for the nation's utilities that are hampered by this notion.

Industrial Development Goals

SUPPORT of area-wide industrial development is another major objective of the Puget Sound Utilities Council. As set forth in the council's original, and continuing, declaration of objectives:

> These utilities agree to explore ways and means as to how—on a broad basis —they can best foster an expansion of the economy, aid in the creation of more jobs and larger payrolls, and help achieve the exceptional industrial and other growth potentials which the Puget Sound-Cascade area possesses.

As a result of this philosophy, the council has set a pattern of regional co-operation in economic development, just as it has pioneered industry co-operation between public and private utilities. From the day it was founded, the council has continued to assist local communities to attract new industry—through assurance of adequate supplies of electric power and resource surveys which show prospective industries what the area has to offer.

The council's example of region-wide, active support of industrial expansion programs has stimulated similar co-operation between organizations outside the council.

In the spring of 1956 the council's backing of industrial development sparked the formation of the Puget Sound Industrial Development Council. The organization, which has some 150 members from 13 counties, serves as a clearinghouse for regional and local programs for attracting new industry and expanding established industries. This is a case of co-operation begetting more co-operation.

Activities Benefit Members

IN considering the four primary benefits derived by the general public from the activities of the Puget Sound Utilities Council, it has been evident that the benefits are of equal importance to the council members. Their partnership makes possible the billion-dollar program now under way. It also makes possible an integrated transmission system with interconnections among the five utilities.

The council has recommended that member utilities develop a new 230-kilovolt network. Each utility will build its own portion of the system, and will receive the benefits of the entire network. The new transmission facilities, to be completed by 1965, will permit complete integration of the region's power resources, will provide protection against

system overloading and outages, and will be able to meet the needs of expected industrial growth.

Thus, the five utilities have been able to provide for the power needs of the area with a minimum effort and maximum result—through co-operation.

This would not have been easy for the five utilities working on their own. Frank McLaughlin, Puget Sound Power & Light Company president, has underscored the fact that the Puget Sound Utilities Council "fills an urgent and basic need."

Good Public Support

"TODAY's power problems are complex and challenging," McLaughlin said. "Tomorrow's area power requirements bulk large.

"Possessed of a solid foundation of public support, the council is destined to make major contributions to the growth and development of the Puget Sound-Cascade area."

Does the council have "a solid foundation of public support"? McLaughlin, speaking for all the council members, says emphatically it has.

"The people of the Puget Sound-Cascade area look with great favor on the council utilities squarely facing up to their responsibilities," McLaughlin said.

"This is strongly evidenced by the enthusiastic endorsements and widespread support from the press and people of the area with respect to the council's enlightened partnership, whereby through co-operative endeavor it is sought to provide adequate power at the lowest possible cost and to foster the civic progress and economic growth of the area."

Two public opinion surveys support McLaughlin's belief that the general public endorses the work of the Puget Sound Utilities Council.

A survey conducted by Elmo Roper and Associates in 1956 showed that "by better than 15 to 1, people in the Puget Sound-Cascade region approve of the idea of the Puget Sound Utilities Council. They say they agree wholeheartedly with the idea of the five principal electric utilities in the area forming a council to plan power needs and to assure the Puget Sound region ample low-cost power."

A LATER survey conducted last year by Louis Harris and Associates indicated "a clear and unmistakable trend of public attitudes on the power question."

"Support for the philosophy of partnership and co-operation in the power field has grown substantially," the survey report said. "Support for the Puget Sound Utilities Council remains very high. The margin favoring the council was 15 to 1. Now it has risen to 17 to 1.

"Public sentiment in favor of this unique effort at co-operation stems from the basic demand of the people for an era of peace in the power field. To many, the council is the embodiment of the idea of harmony to meet the region's economic and electric needs.

"It is plainly evident that the new power philosophy among people in the Puget Sound-Cascade region—of co-operation for power and economic development, rooted in local control—has now reached overwhelming proportions. What appeared in 1956 as a change of major magnitude in public attitudes on power now seems to have become even more firmly set with time.

"The direction for the future, in the minds of the people, seems to be clearly toward increasing co-operation on the part of all of the electric utilities in the region. The people, on reflection, seem to be saying that they have tried the route of political controversy in the past, and this has not brought progress.

"TODAY, their mood is one of demanding that all who are concerned with the future of the region work together in common purpose, free of partisan politics and with actual power and economic needs foremost before them.

"Basically, people feel that they have found in the Puget Sound Utilities Council a new middle course on power, best suited to the maximum growth of the region. To accept any course other than this, most believe, would be to return to the conflict and strife that so long impaired progress and retarded development.

"The people are fundamentally skeptical of extremes of any kind, and feel in their own Puget Sound-Cascade region they have discovered a new way of handling the power problem in peace.

"When public opinion on an issue of such importance as this reaches margins so overwhelming as have been recorded in this survey, the results can no longer be taken as being indicative of a temporary or passing mood. Rather, for the people themselves, it is apparent that the new philosophy on power has become a lasting part of a new way of life."

Here we have a clear indication of what the council's new era in electric utility co-operation means to the persons immediately affected by it. What such a program could mean nationally has not been determined. But some conclusions are suggested by the specific instance in Washington state.

THE issue of public *versus* private power has been eliminated in the Puget Sound region by the simple expedient of co-operation. Could it not be the same throughout the nation? The answer to this question may not be clear, but certainly the example which prompted the question is apparent to all.

Courage and foresight have paid handsome dividends for the Puget Sound Utilities Council and its customers. Could they not for you—and you—and you?

The Reluctant States

"IN *the whole matter of the growing centralization of authority in Washington the federal government certainly deserves a large share of the blame. For years it has been encouraging states and localities to come to Papa on the Potomac for help with everything from road building to juvenile delinquency. But the states and localities, as this conference* [*on turning over to the states some federal spending programs*] *once again underscored, are far from blameless.*

"*. . . checking federal paternalism . . . never will amount to much until the states develop enough common ordinary spunk to tackle their own problems.*"

—EDITORIAL STATEMENT,
The Wall Street Journal.

Are They Egging You on To Become a Writer?

A technical man can earn $25 to $75 more each week by translating his experiences into print. The kind of writing wanted is clear, factual reporting, not fancy words and expressions. Utilities need writers more than other business because they are constantly being written against by clever propagandists. Here is some sage writing advice.

By JAMES H. COLLINS*

FIFTY thousand dollars is real money to most any engineer. He can have up to $150,000 added to his salary, says an engineering editor, if he develops the ability to write. Twenty-five to $75 more on the weekly pay check, over a 40-year professional career, is worth trying for. The technical journals these days are egging on technical fellows to write, and telling them how to do it.

Unfortunately, the advisers are laying down literary rules for writing—learn grammar and be correct, watch your punctuation, enlarge your vocabulary, get your wife to read over your work for average reader opinion. They do not seem to be familiar with the kind of writing needed in business, for which a utility company would pay an engineer, a right-of-way negotiator, a field supervisor.

The experts are calling it "communications," and making it tough before the technical fellow gets started at all, scaring him off, when writing might be simple, natural, interesting, if it could be tackled regardless of bookish rules.

THE following suggestions are offered by a writer who has been writing for many years, practically all of his work published, paid for, and useful, and not to be considered literary.

He never went to college. The one fact in grammar that he is sure of is, that a noun is a name, and that has never been of any use to him. There were no books about *"How to Write"* when he began, nor any courses in writing or journalism in colleges. There were only English pro-

*Professional writer, resident in Washington, D. C. For additional personal note, see "Pages with the Editors."

fessors, expounding the Great Books.

So, he had the advantage of not being told that there were rules, and that writing was difficult. He was self-taught, as a printer, following other writers' copy.

Once he did go to Yale, when invited to talk to the engineering class by its professor, who admired his magazine articles because they dealt with subjects interesting to an engineer, like a series on how skyscrapers were built or what at that day were regarded as skyscrapers. For those young engineers, about to go out into the world and build their first bridges, he tried to tell them that the ability to write would be an asset. That their kind of writing would have nothing to do with the Great Books. That they would write as part of their jobs.

"The trouble there," said the engineering professor, sadly, "is that everything these students have written during their four years here had to go over to the English department and be scored for grammar, punctuation, and all those things you've been telling them to forget."

He added, "I'll bet your own articles would get low marks over there!"

Writing Yardsticks

THE English department has the wrong yardsticks for measuring the kinds of writing that technical and utility men will be called upon to do today. Its rules are based on books that were written long ago, by writers who never suspected that there were rules. Writers today are producing material for future rules, and people talk, and listen to broadcasts, and watch sports, and keep speech and writing fluid.

For example, the word "research" was pronounced "re*search*" while it was used chiefly in the laboratory. That pronunciation expressed its function. Dictionaries accented it so. Presently the word escaped into the common world, and was "*re*search," and the dictionaries have now approved both pronunciations.

Thus the rules are made, but they have little bearing on ad writing, script writing, report writing, and the many other kinds of scribbling, two-finger typing, tape dictating, and so on needed in the working world. The sooner the technical man understands this, and says "Damn the torpedoes!" the sooner he will be on his way to that ear of corn—those extra dollars.

IF he could sit in at an editorial conference, of professionals who make their living by judging and paying for writers' work, it might be enlightening.

The first essential in writing is to have something to say, and old hands in the market place want to know what the article, story, or script is about. Then they consider the audience for the subject. How many readers are likely to be interested? Certain subjects have wide interest—crime, money, food, success. Other subjects have interest for limited audiences—finance, education, science.

If the article is already written, consideration will be given to the way it is handled, unless the author is a well-known authority on that subject. Other angles may need development. If it is an idea under consideration, the questions of who is to write about, and how, will be discussed.

No editor is rash enough to predict if readers are going to like the article or not. Subjects that appear to have all the makings of success will fall flat, and others in no way distinguishable will spring into

popularity. With articles, there is also the factor of controversy—a given subject could be violently disliked, and still be a success in arousing reader interest. This is what makes writing, editing, and publishing such an exciting gamble, and there is a gambling element in a good deal of technical writing.

EVEN Shakespeare had to have something to write about, a job to do. He belonged to a troupe of actors, who needed a fresh play, the one that had lately been so popular having lagged at the box office. So Shakespeare took up a book of tales. The Italians wrote the best short stories at that time, their tales had attained popularity, and were good theater. Shakespeare picked out several that had love interest, intrigue, story twists like heroines disguising themselves as men, and his manager and the actors probably held an editorial conference, weighing plots, parts, popularity of past plays—what today we call "market research."

Literature has always been written for the market, about something that people were interested in. When Homer smote his bloomin' lyre people were interested in a recent war. He made up tales about that and recited them in that crossword market, the agora, and passed the hat. Or so scholars reconstruct it. Homer probably could not write; writing had only lately been invented.

Technical People Must Write

TECHNICAL people have several advantages in writing. Something to write about—their work. A captive audience, maybe only one reader, the Boss, but read he must. They are already writing, in their reports, though that may not be thought of as writing. It is words on paper, the beginnings, the kind of writing the company wants done.

Writing is not so much grammar and punctuation as a way of looking at subjects. There is the story of the newspaper writer who complained that he had nothing to write about, and his editor said, "Write an article about the fly." And going to the public library to read up on flies, he wrote a book.

Picture a utility field superintendent whose work is running down and stopping gas leaks. Writing his annual report is an ordeal. He enumerates leaks stopped last year, figures the value of gas saved, compares costs over several years to show how they are rising, asks for new equipment, more men. Getting stuff for reports is often hard for men who are good at their work. Some of the padding devices are comical, such as adding up the number of

¶ "THE *technical man who views his work broadly is establishing his reputation as an engineer or manager; his Boss registers as an executive who knows how to hire good men, build a top-notch organization. The company gains standing in various ways—professionally, financially, with the public. Pay raises and promotions have been known to follow on reports where men have been absorbed in their work, and wrote with a view to selling it to management.*"

letters written last year, constructing diagrams of man-hours, and so on.

The field superintendent's Boss goes through his report, no matter how scrambled and sketchy. He may get something out of it for his own report.

CONSIDER the way a professional writer would report on gas leaks. The idea of sending a botanist around to detect them would fascinate him. Escaping gas displaces soil air needed by vegetation; and grass, shrubs, and trees in the residential neighborhoods show it, often in leaks not detected otherwise. This sensitivity has been developed in a technical service, with operatives trained in botany, plant pathology, the character of soils, and other skills. Leaks are not only detected and located, but marked for immediate or later attention.

Leaks in paved areas—the business district, with little or no vegetation—are dealt with in other ways. Escaping gas travels under pavement, works its way into conduits, manholes, and buildings, and has to be followed up by an elaborate inspection system. Stoppage of such leaks heads off trouble, and the gas saved is said to pay for the service.

Gas leaks are not entirely a gas company problem, though the company may be blamed for trouble encountered by power and telephone companies, and city officials. Gas is detected in manholes by employees of other utilities, using detection devices, to be sure of safe working conditions, or sometimes such leaks are discovered by explosions. The gas may be coming from gasoline or cleaning solvents, allowed to run into sewers, which is a matter for the city to take up. So, utility companies and the city get together in a combined inspection program, covering all hazards, and costs are parceled out in a way that gives a low insurance rate on trouble. The economies to the gas company are obvious.

On this basis, gas leaks become interesting to management, to the general public, and employees. Public relations writers will welcome such material. The field superintendent may write an article for trade journals, giving information to other utility people, and registering the fact that his company is a leader in such matters.

MANY a parsnip has been buttered by reports seen from such an angle. The technical man who views his work broadly is establishing his reputation as an engineer or manager; his Boss registers as an executive who knows how to hire good men, build a topnotch organization. The company gains standing in various ways—professionally, financially—with the public.

Pay raises and promotions have been known to follow on reports where men have been absorbed in their work, and wrote with a view to selling it to management.

A warning to management is in order here: The writer of a good report, gaining reputation, has often been hired away by another company!

Such writing is especially beneficial to concerns rendering outside business services to management, called in for innumerable problems, from package design to basic research. Their specialists are encouraged to write and publish in professional and business journals, to build reputation for the company, and also present problems, and solutions, that are found in other fields. The writing engineer,

Why More Writing?

"THE world today is so full of writing that libraries are being turned into scanning machines to keep pace with it all. So, why more writing? Why should the technical fellow, and especially the utility man, be prodded into acquiring this inky trade, on top of physics and 'math'? For the utility man there are special reasons. Regulated business more than others is constantly being written against, by expert writers. Some of them are misinformed, others propagandists. But they are adepts. The more utility people write about their business, their problems, their responsibilities, their growth with the community, the more sound information the public will have."

chemist, economist, is helped by the use of office facilities, and sometimes paid, or assisted in publication.

Professional Writing Tips

PROFESSIONAL writers have tricks that can be helpful to the technical man, none of them patented.

What bothers many unaccustomed writers most, at the beginning, is self-consciousness, stage fright of the kind that makes rubbery legs in rising to make a speech. Rules for grammar, diction, and style simply add to this self-consciousness. With a little experience, the unaccustomed speaker discovers that his stage fright disappears as he becomes interested in what he is saying, and it is that way with writing.

"I'll be all right if I can just get started!" mutters the novice, and it should hearten him to know that some of the classic writers had trouble with their

starters, too. Balzac, Scott, Cooper, and others wrote several pages of philosophy, moralizing, pointless description, before they brought in their characters and stories. The writing novices have a great affection for Mark Twain's observation on the weather—which he never made. The professional author in these faster times starts off with something arresting, like the thrill writer's change of pace when an editor complained that he did not get into his story: "'Hell!' exclaimed the beautiful duchess, lighting her cigar." Better yet, the reader arrest is made in the heading with something like, "Will Our World Last until Christmas?"

If the writer cannot get started without a philosophical introduction, then throw away the introduction, and discover that his article has started itself. This is the equivalent of the first minute of a speech. As he gets interested in his subject, self-consciousness disappears.

One of the best devices for getting started is an old one used on newspapers —putting the gist of your story in the first two or three paragraphs. This is a mechanical trick. In newspaper make-up, running articles over to back pages, some of the text may be lost. If the news is in the first two or three paragraphs, and the head and subhead, the reader will still get it. Summarizing the article or report you are going to write helps in the writing. Also, it is a convenience to the reader.

Many technical articles are written largely with a camera. If the subject lends itself to photos, they can be used to help the reader. It is an old magazine device to caption pictures so readers will have to scan the article to find out what the picture is about: "Who Is Right about This Bridge—The Engineers or the Aldermen?"

The technical man's report generally divides into sections, reflecting his orderly mind. Some sections outline the project or problem, others offer solutions or choices, and he winds up with suggestions. If these sections are numbered and indexed, readers find it easier to get the whole gist of his subject—and this makes for easier writing.

Writing teachers have a good deal to say about vocabulary. The novice is told to read the Bible, enrich his store of synonyms, select Anglo-Saxon words instead of those derived from the Latin and Greek.

But the technical man has a vocabulary that he may have to get rid of—the professional lingo of his trade.

If he reads the Bible for words, and compares it with even the popular magazine articles of today, he will find long words being used for ideas that could be put in Bible language, coined words that glamorize goods, or make mysteries of vocations—the King James translators would not know, today, what it is all about.

There is a notorious word-counterfeiting ring on Madison avenue:

"Dad, it says here to moisturize my hair—how do I do it?"

"Just wet it, son."

Voltaire said that speech was useful for concealing thought. He should sit in on rate regulation hearings, and see how the technique has been improved since his day, with what Francis Welch calls "bumblery."

If an attorney testified to an untruth before the commissioners, Welch points

out — himself an attorney — he could be punished for perjury. So, let him confuse the record by using abstract words that mean nothing, stringing them out so that meaning is lost, nothing can be proved, nothing can be done about it.[1]

For a good many years the present writer has been interviewing all sorts of specialists about their work — engineers, chemists, lawyers, merchants, utility executives, men in government, foreign trade, advertising. His purpose has been to write about their work for popular audiences—roughly, explaining to their wives what it is they really do at the office, what their difficulties and successes.

Generally these specialists, talking to a reporter, answering boy questions, were simple and clear in explaining what they had to do, how they did it, how it turned out, how they would do it again. They became interested in the everyday reader's viewpoint, and were themselves interesting in consequence.

Which seems to prove that the technical man has the makings of a lucid writer.

Professional lingo is necessary in technical writing. Its terms are yardsticks, without which its knowledge could not be recorded and circulated. But there are interested people who want to know about these specialties in plainer language, and for them the technician has to translate himself. It is a good beginning to size up the particular audience he is writing for.

He may have a report on a project under consideration by management, which will be read by company officials who know the lingo. He can use lingo freely. It has the advantage of exactness. His information might make an article for a professional journal, and the lingo is all right there.

But suppose the company executive who reads this report decides that it has value in other ways. The financial department might pass it on to investment bankers, because it gives information about the company's management and prospects. The company's directors might like to read it—they are men from other lines of business, not versed in the lingo. Then the information needs translation of technical terms, and illustration by graphs and similar devices.

Going a step further, the editor of the employee magazine sees the basis of an article in the report, or the public relations manager decides that it has interest for newspapers. It can be made comprehensi-

[1] "Drop That Verb, Commissioner," by Francis X. Welch, *Telephony*, January 18, 1958.

¶ "Professional *writers have tricks that can be helpful to the technical man, none of them patented. What bothers many unaccustomed writers most, at the beginning, is self-consciousness, stage fright of the kind that makes rubbery legs in rising to make a speech. Rules for grammar, diction, and style simply add to this self-consciousness. With a little experience, the unaccustomed speaker discovers that his stage fright disappears as he becomes interested in what he is saying, and it is that way with writing.*"

ble to wives and small boys by the editor or publicity writer, or the technical fellow might find pleasure in authorship, write it himself.

NAPOLEON had a formula for army orders that may be helpful to the technical writer. He sized up his audience. One of his most famous orders was issued to the desperate rabble assigned him for the invasion of Italy, in the hope that he would be licked and disappear. He did not order anything, used no military terms, could have written it on a postal. He painted a picture, told his soldiers that they were hungry, ragged, shoeless, unpaid, forgotten — but that everything they lacked lay just over the Alps. The rest is history.

Language abounds in words that make mental pictures. Napoleon used such words, and got results. Technical writing runs heavily to abstract words that make no pictures.

Hamlet might have soliloquized about "The ultimate theoretical desirability of tolerating the repercussion of adverse eventualities," suggests Mr. Welch. Instead, he wondered "Whether to take arms against a sea of troubles," which conveys to a galloping reader what he was up against.

The technical writer will do well to become a translator, too, converting what he has to say from the abstract to the concrete—or from highbrow to lowbrow.

More Professional Devices

"BE brief!" the literary advisers urge upon the technical man, and point to Lincoln's Gettysburg address.

But brevity for its own sake is not always desirable. Readership tests have shown that it is interest in the particular subject to the person reading that governs. A family considering buying a home will read everything obtainable about houses. A purchasing agent following specifications for materials will listen and read everything about properties, grades, prices, storability.

One interesting "brevity" test was made for a clinic that removed facial blemishes. In the many pages of the Sunday papers was published a purposely confused screed about the clinic, set in small type, solid, made as hard to read as possible. In the text was buried an offer to remove one small blemish, such as a mole, free of charge, if the reader came to the clinic at exactly 10 o'clock the next morning.

The number of readers who came proved that it is interest more than brevity that holds readers in many cases—their own interests. Persons under the humiliation of a blemish are an extreme and pitiful example of reader interest, but a scanning of advertisements will show that most of them are written to this rule, that some subjects command patient reading.

MAYBE an article should be brief or otherwise, according to Lincoln's saying about a man's legs.

Brevity is advised for easy reading, but the professional writer has other tricks.

Paragraphing is one, and going through technical articles it is seen how badly it is needed to lighten the text. The Great Books often need paragraphing. Gibbon's *"Decline"* is a howling example; solid pages of good reading, but requiring the closest attention and reading back, to get

Reports Are Writing Jobs, Too!

"PICTURE a utility field superintendent whose work is running down and stopping gas leaks. Writing his annual report is an ordeal. He enumerates leaks stopped last year, figures the value of gas saved, compares costs over several years to show how they are rising, asks for new equipment, more men. Getting stuff for reports is often hard for men who are good at their work. Some of the padding devices are comical, such as adding up the number of letters written last year, constructing diagrams of man-hours, and so on. The field superintendent's Boss goes through his report, no matter how scrambled and sketchy. He may get something out of it for his own report."

the essence of his story. There are the famous two chapters on early Christianity that were so hotly debated nearly 200 years ago, and other chapters on Attila, Genghis Khan, Mohammed. A modern editor is needed to break up many of the Great Books into eyefuls.

ANOTHER professional device is dialogue. There is something attractive in quotation marks, somebody is going to speak, a person is coming into the story. Here is an abstract statement from a booklet:

"Businessmen and women share a common bond which if strengthened by understanding and co-operation should go far toward advancing their biological relationship."

Pretty cloudy! Put in the mouth of an imaginary character, "You know Judy O'Grady and the Colonel's lady?" said the old manager. "Well, people in business, men and women, are like that, sisters under the skin."

Dialogue introduces people, and people are always interested in people.

Bringing in an occasional story makes for easy reading. Here is a good brevity story; told by a professor in chemical engineering:

His class was given a writing theme by the English department, each student to do a character sketch of his roommate, a theme likely to stimulate observation, and descriptive ability. One student wrote his sketch in four words, "Henry is a jerk." Cornell Professor Fred Rhodes thought

it perfect—he knew Henry, and Henry was a jerk.

But the English department rated it zero—it did lack particulars.

Then there is the Q. and A. technique that leads readers to follow court trials and congressional investigations. Much technical writing can be turned into that form, sharpening reader interest, and the writer who explores his subject by asking himself boy questions, and answering them in boy language, will generally develop original angles.

Punctuation is a detail on which literary advisers lay considerable stress, and the writing novice may get the impression that there is a right and a wrong way. Punctuation is a personal thing, some writers using almost none, even for long texts, and others employing commas after every few words, with semicolons, colons, dashes, exclamation points. Close punctuation clarifies meaning, makes easier reading—the present writer is a close punctuator.

Writing Not for All

FINALLY, a word about the technical man who hates writing, avoids writers, and wants only to be left alone in the laboratory, or drafting room, to concentrate on absorbing work. Purses have been made out of sows' ears by chemists, as a stunt, but no English department will ever make a writer out of this character, well known to everybody working with technical men.

Learn to write, and enjoy that fifty to a hundred-fifty extra pay before he retires? The cob of corn does not fool him. He is led on by a more alluring bait, phenomena on the borders of the unknown, posing intricate questions to nature, getting surprising answers, like Bell when the telephone first muttered a word, or Lee De Forest when late one night, a tube in his experimental setup whispered.

Money? This character has often come up with an original discovery that made the cob of corn look like chicken feed. Happy in his world, letting severely alone is best for his company as well as himself.

Why More Writing?

THE world today is so full of writing that libraries are being turned into scanning machines, to keep pace with it all.

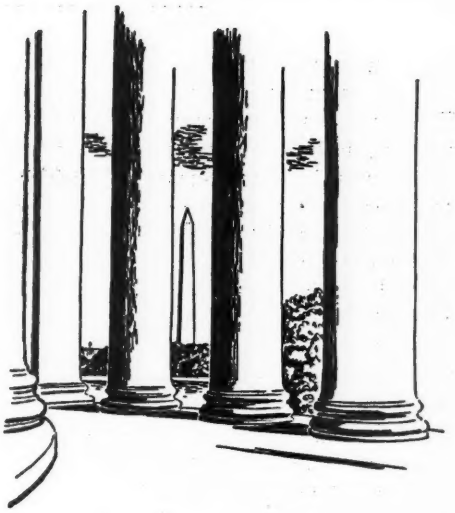
So, why more writing?

Why should the technical fellow, and especially the utility man, be prodded into acquiring this inky trade, on top of physics and "math"?

For the utility man there are special reasons. Regulated business more than others is constantly being written against, by expert writers. Some of them are misinformed, others propagandists. But they are adepts.

The more utility people write about their business, their problems, their responsibilities, their growth with the community, the more sound information the public will have.

Washington and the Utilities



Legislative Roundup

THE 85th Congress finally called it a day on August 23rd and wound up its second session, remarkable for its lack of positive legislative achievement on the domestic front. Preoccupation with international and security matters may account for this, although it had been expected that concern over the business recession and resulting unemployment would bring forth a variety of pump-priming measures similar to those enacted in the early days of the New Deal. On this score, however, both Congress and the administration are to be congratulated for keeping their heads. For in looking over the record, very few so-called anti-recession measures were ultimately enacted, without modification, a fact which may be attributed in part to an awareness of the growing national debt and indications of a pickup in business activity.

The antirecession legislative score board discloses the following results: (1) slightly higher appropriations for public works, including funds for the Army Corps of Engineers and the Bureau of Reclamation; (2) enactment of an omnibus rivers and harbors, flood-control bill to authorize construction of numerous projects for which money must still be appropriated (the bill was considerably modified after a presidential veto, and a number of projects eliminated); (3) defeat of a $2 billion lending program to enable counties and municipalities to construct community facilities; (4) enactment of an aid-to-depressed-areas bill providing $200 million in industrial loans and up to $75 million annually in grants for construction of public facilities (at this writing, there were predictions that the President might veto this measure); (5) defeat of housing legislation pushed by its proponents as a necessary antirecession bill.

AMONG other bills affecting or of interest to public utilities, the results were largely negative. After many alarms and excursions, it was finally decided to drop attempts to pass legislation authorizing TVA to issue revenue bonds to finance future power expansion. Chairman Smith (Democrat, Virginia) of the House Rules Committee emerges as the hero or villain of this story, depending upon your

point of view. Smith had successfully blocked committee action on a House TVA self-financing measure since last summer, and was no more favorably inclined toward a Senate-passed bill which had been recently reported by the House Public Works Committee. Unless the House votes otherwise, bills may not be debated in the House before their approval by the Rules Committee.

Smith's reaction to loud demands from TVA area Congressmen for Rules Committee approval of their bill was to "disappear" for several days. When he finally returned to the Capitol, a compromise was worked out with House Speaker Rayburn whereby Smith agreed to let several controversial measures come up for debate in the House. But he remained adamant with respect to the TVA bill, which he regards as opening the door to unlimited and uncontrolled expansion of the federal power agency. Speaker Rayburn served notice that the measure would be revived at the next session, when it faces a new, and possibly more heavily Democratic, Congress.

As expected, Congress took no action whatever on administration proposals to raise REA interest rates on loans to co-operatives and to require co-ops to finance part of the cost of future expansion through government-guaranteed loans from private sources. Friends of REA co-ops in Congress answered this proposal with one of their own under which REA would not be subject to control by officials of the Department of Agriculture. The result was a draw, with neither side succeeding in its aims. The latter proposal will no doubt be revived in the next Congress, but it is almost certain to be vetoed if it ever reaches the White House.

ASIDE from federal projects authorized in the omnibus rivers and harbors, flood-control bill, Congress failed to approve any major federal project legislation. The proposal for a high federal dam at Hell's Canyon in Idaho was finally put to death in the House Interior Committee. The same committee turned a deaf ear to all "partnership" projects of any significance, including the Trinity River project in California. The expensive $160 million Fryingpan-Arkansas water development project, recommended by the President and approved by the Senate, met the same fate as two previous authorization bills when it got caught in the log jam of last-minute activity in the House.

So far as the natural gas industry is concerned, the list of legislative accomplishments will not make inspiring reading. All hope for passage of legislation exempting independent natural gas producers from FPC jurisdiction disappeared as early as last February. Nor was any legislation introduced clarifying the rate-making provisions of the Natural Gas Act, which have been clouded by the decision of the U. S. circuit court of appeals for the District of Columbia in the so-called Memphis case.

IN the field of general legislation, the record is spotty. There were no changes in corporate taxes or in personal income taxes. However, legislation was enacted to amend certain provisions of the federal income tax law. Included in this measure is a provision permitting public utilities to recompute federal taxes for prior years whenever they have been obliged to refund money to customers as a result of court orders or to avoid litigation.

Legislation intended to give Congress tighter control over government spending was sent to the White House in the last week of the session. Opponents of the bill, however, doubt that it will have the intended effect. The bill permits Congress

to put a ceiling on spending each time it passes an appropriation bill. This is designed to prevent government agencies from using funds appropriated in the previous year but not spent. Critics of the measure predict that in the future Congress will be tempted to vote more than it allows an agency to spend, thus shifting to the administration the decisions on what funds to eliminate.

FINALLY, Congress failed to enact a labor reform bill, despite the disclosures of Senator McClellan's investigation into abuses in labor unions. Although passed by the Senate, it was defeated in the House where it failed to win even majority support, not to speak of the necessary two-thirds majority required to pass it under the special procedure by which the bill came up for debate. A similar bill will no doubt be introduced in the next Congress.

With the end of the 85th Congress, all bills which failed of enactment must be reintroduced if they are to be considered by the next Congress.

Atomic Energy Programs

PRIOR to adjournment, Congress approved a $2.4 billion appropriation bill containing many provisions to which President Eisenhower is opposed. Specifically, the Senate restored a $20 million appropriation, previously eliminated by the House, for construction of a $51 million gas-cooled, natural uranium-fueled nuclear power reactor. Congress had already authorized the reactor, but the House knocked out the appropriation.

The Senate also confirmed the House appropriation of $45 million for a dual-purpose, plutonium and heat-producing reactor, and $39 million for construction of additional AEC research facilities, including design studies on four more civilian nuclear power plants. The power reactors and research facilities all form part of a $386 million AEC construction authorization bill which the President had reluctantly signed earlier. In signing the authorization bill, the President accused Congress of "burdening" the government with unnecessary expenditures and specifically asked Congress not to go ahead with the follow-through appropriations for its authorization measure. However, Congress chose to ignore his wishes.

In a related development, Congress approved legislation needed to permit United States co-operation with Euratom, the six-nation European atomic power community. The countries of Euratom are France, Belgium, Germany, Italy, the Netherlands, and Luxembourg. Approval came despite complaints that the legislation had been submitted too late in the session for proper scrutiny. President Eisenhower had urgently requested approval at this session so that the first stages of the big-scale European atomic power program could get under way. The Euratom plan calls for the construction of six power plants to produce one million kilowatts of electricity.

KEY provisions of the Euratom agreement include: (1) authorization of $3 million for research and development assistance, the first instalment of a projected total of $50 million, to be matched by the Euratom countries. The money must be appropriated separately next year. (2) Establishment of a ceiling of $90 million for payments needed to meet guaranties of the life of fuel elements sold to the Euratom power plants. No actual money was authorized, the Joint Committee on Atomic Energy reserving jurisdiction over amounts in individual cases. (3) Authorization for the sale to Euratom of

30,000 kilograms of enriched uranium which goes into the fuel elements. (4) Authorization for the "buy-back" by the United States of up to 4,100 kilograms of the plutonium by-product of the reactors. The bill specifies that this plutonium should be for "peaceful" purposes only.

New Tax Ruling

A RECENT decision of the third U. S. circuit court of appeals may force the Internal Revenue Service to change its tax policy with respect to customer contributions to public utility companies for the extension of utility lines for future service. Heretofore the IRS has held that such contributions do not constitute income to the utility company and are therefore nontaxable. This has been the prevailing rule, despite a 1943 decision by the U. S. Supreme Court which seemed to indicate that such contributions were taxable income to the utility.

Up to now, the IRS has not followed the 1943 Supreme Court decision on the ground that it was not direct enough to warrant IRS changing its position. However, a new case recently decided by the third circuit court has brought up the issue again. A company providing community television antenna service sought to have advance customer payments to help build the facility declared nontaxable. The IRS argued that the company was not a public utility and so should pay taxes on the customer contributions. The tax court agreed, and its decision was upheld by the third circuit. However, in so ruling, the court repudiated the position taken by IRS with respect to public utilities as having been overruled by the 1943 Supreme Court decision.

IRS officials are now studying the third circuit decision. If a new tax rule results, IRS officials have indicated that it will not be applied to public utilities retroactively.

REA Interest Rates

ALTHOUGH Congress showed no inclination this year to adjust interest rates on REA loans to electric and telephone co-ops, it is interesting to note that REA Administrator Hamil, for the first time since taking office, has gone on record in favor of higher rates. In an address to state rural electric publication editors, made several weeks before Congress adjourned, Hamil accurately predicted that the administration's proposal for private financing of future co-op expansion was as "dead as a hammer." At the same time, however, Hamil put himself in the camp of those who believe that REA interest rates should be more realistic than the present 2 per cent.

The administration has taken the position that the interest rate paid by co-ops should correspond to the rate which the Treasury must pay on all of its obligations. Hamil would not go that far. He suggested that interest rates in the future be set under a formula which was in operation prior to December, 1944. At that time, Congress passed the Pace Act which fixed REA interest rates at the present 2 per cent. Prior to that date, REA's interest rate was equal to the average rate of interest payable by the government on its long-term obligations of ten years or longer. Borrowers paid as much as 3 per cent in 1936. In 1937 the rate was 2.77 per cent; in 1938, 2.88 per cent; in 1939, 2.73 per cent; in 1940, 2.69 per cent; in 1941, 2.46 per cent; in 1942, 2.48 per cent; in 1943, 2.57 per cent; and in 1944, 2.67 per cent.

Telephone and Telegraph

Second Session Roundup

THE second session of the 85th Congress was more significant for what was not done than for its positive accomplishments, at least in the communications field. Heading a long list of negative results is, of course, the failure to do anything about the 10 per cent excise tax on telephone monthly bills and long-distance service. Theater-goers, liquor distillers, and the purchasers of numerous luxury items were given some relief in a bill overhauling various federal excise taxes. But telephone subscribers were again ignored, despite strong arguments from industry spokesmen that telephone service is a necessity which ought not to be taxed at all.

The refusal of Congress to ease the telephone excise tax was due to a number of circumstances. The excise tax revision bill which Congress sent to the White House does not eliminate in whole any important excise tax, but merely reduces a number of them. Earlier in the session, it had been suggested that the federal telephone excise tax be similarly reduced, with the idea of permitting the states to derive income from this source. But the telephone industry has been holding out for outright repeal of the entire excise tax, rather than a partial repeal that would tend to make the tax a permanent part of the nation's tax structure.

There was also another, and more obvious, reason for Congress' failure to repeal the tax; namely, its status as a large source of federal income. Furthermore, the Senate had earlier defeated an attempt to repeal the tax, so that no effort was made to bring the matter up again in the general revision bill. A proposal to establish a specific expiration date for the telephone excise tax failed to get anywhere.

Legislative efforts in other areas affecting the telephone industry proved equally futile. The House defeated a Senate-passed labor reform bill, after listening to angry charges from Republicans and southern Democrats that it was merely window dressing and would be ineffective in controlling abuses in organized labor unions. Administration proposals to boost interest rates on loans to rural co-operatives were ignored. No change was made in the exemption for operators' wages at small telephone exchanges, and no action was taken to alter the security registration exemption for small telephone companies.

ON the positive side of the picture, Congress approved small business loan legislation which could be helpful to small telephone companies. The measure would

permit $250 million in government funds to be invested in small businesses. The money will be funneled to the small companies through intermediary privately owned investment corporations which would retain any big profits resulting from investments. The government's return is limited to a reasonable interest rate on money loaned to the investment corporations.

The program was believed by some lawmakers to represent the most far-reaching step ever taken by Congress to help small business. Sponsors said the new program was necessary to promote a flow of investment capital to small business. It is designed to answer complaints that small business has considerably more difficulty than big business in obtaining risk capital. The program will be administered by the Small Business Administration, which is authorized to lend investment money to state-chartered small business investment corporations. The investment corporations would be required to raise a minimum of $300,000 in paid-in capital, but they would borrow half of that from the SBA. Then, they would be eligible to borrow at least $150,000 more, since the legislation permits SBA loans equal to half of their paid-in capital. Earlier this year, Congress enacted a law making the SBA a permanent agency. It had previously been operating on a temporary basis.

Teletype Service Rates

WESTERN UNION and the American Telephone and Telegraph Company have applied to the Federal Communications Commission for rate increases on their interstate private line teletype services, to be effective October 1st. AT&T wants a 26 per cent increase, totaling $11 million. Western Union is seeking a 23 per cent increase, amounting to $7.6 million. Both companies have made it clear that their proposed higher rates are for interim purposes only, and that they expect even higher rates when the FCC completes its long-range study of privately leased telegraph and telephone services which the commission began in 1955.

In its application to the FCC, AT&T declared that its earnings on invested capital for teletype service are running at confiscatory levels of 1.7 per cent—a completely inadequate return which requires a substantial increase in rates. Western Union argues that cost data it has compiled show conclusively that the present leased facility service rates are deficient.

Western Union, which serves 1,800 clients, claims its earnings on investment capital are 2.3 per cent before taxes. It has requested a rate increase which would result, after taxes, in a return of 6.7 per cent to 7.4 per cent, depending on how costs are figured, but still short of the 10 per cent the company thinks it should have. AT&T, which serves 3,000 teletype customers, did not indicate in its application what return it might expect from its proposed $11 million increase in rates. Many AT&T customers who will be affected by the proposed rate increase also use private line telephone service on which rates for many users decreased on August 24th as a result of an FCC order.

REPRESENTATIVE Celler (Democrat, New York) announced that the House Antitrust Subcommittee, of which he is chairman, will keep a watchful eye on the way the FCC handles the requested teletype rate increases. Celler urged the commission to scrutinize "carefully" the proposed rate hikes. He also said the FCC and the Justice Department should find out whether there was any "collusive activity" between AT&T and Western Union, noting that "it seems most curious

that AT&T and Western Union filed these rate increase applications on the very same day." Celler said serious antitrust problems would be raised if the applications "resulted from collusive activity," rather than coincidence.

"Because of the size of the increases sought and their impact upon various groups of users, it is absolutely essential for the commission carefully to scrutinize the applications to determine whether or not the increases requested, or any increases at all, are required under the Communications Act," Celler said in a statement. The New York Democrat also said FCC Chairman Doerfer has advised the House subcommittee that the commission plans "no action of any kind" towards reducing AT&T's long-distance telephone rates. During subcommittee hearings last spring, Celler charged that the public has been overcharged $159 million for long-distance service in the last three years. Celler noted that the FCC approved a $65-million-a-year hike in long-distance rates in October, 1953, "without a hearing of any kind." He said "it is to be hoped" there would be no repetition of this in the new rate increase case.

Acquisition Rule

THE United States Independent Telephone Association, national association of the independent telephone companies, is fighting a proposed FCC rule on so-called acquisition proceedings. Under the proposed rule any party opposed to an application by one telephone company to acquire the property of another telephone company would have to file a statement showing that the proposed transaction was not in the public interest. The FCC invited comment by interested parties.

The Bell system is in favor of the proposal, claiming that it would speed up acquisition proceedings in the public interest. But the USITA points out that the law now gives the right of hearing to the USITA and to state telephone associations and to individual companies interested in any acquisition proceeding before the FCC. Since these parties have such rights by law, the USITA claims that the FCC has no authority to require a statement of reasons in advance when requesting acquisition hearings. USITA has also asked the FCC for sixty days' notice (as compared with a commission proposal for forty days' notice) to parties who might be interested in acquisition cases.

Northwestern Bell Denied Rate Boost

THE South Dakota Public Utilities Commission has refused to reconsider its order of last June denying in full the application of Northwestern Bell Telephone Company for a $2,297,748 rate increase. The commission found that the company's first-quarter (1958) earnings on its South Dakota business indicated a return of 5.9 per cent on an average net investment rate base. The commission held that such earnings were "far above the point of confiscation."

A number of interesting points were included in the commission's opinion. For example, the commission justified its use of past operating results as a basis for estimating future earnings. It also used the average calendar year 1957 as a test period instead of an end-of-year figure. The so-called "attrition" factor was considered but disregarded because, said the commission's opinion, there is "reason to believe that inflation will not be as serious a problem as it has been in the past."

Financial News and Comment

By OWEN ELY

An Old Rumor Revived—AT&T Stock Split Coming?

THE rumor that American Telephone and Telegraph might split its stock and increase the cash dividend payment is a hardy Wall Street perennial. About two years ago a determined effort was made by a stockholder to bring the question out into the open, for discussion at the annual stockholders' meeting. While there was no official connection between the two developments, it was surmised in some quarters that the unusually generous stock rights in September, 1956 (worth about $7 a share), were designed to quiet this agitation for a stock split and higher dividend.

AT&T has had some lean years in earlier periods when it failed to earn the celebrated $9 dividend, and in the postwar era it has been anxious to bolster earned surplus so as to be able to withstand a depression possibly approaching 1929-32 in severity. With the good earnings of recent years, this may now have been substantially accomplished. Marked progress has also been made toward mechanization of operations.

Recently the suggestion appeared in two quarters that the company might, possibly in 1959, change its financial policy of the past thirty-seven years, split the stock, and increase the dividend payment. (No specific suggestions were made, but a logical method of accomplishing this would be a 4-for-1 split—putting the stock somewhat in line with other utility stocks pricewise—and initiating a $2.50 rate equivalent to $10 on the old stock.) Wertheim & Co. in July issued a four-page memo, pointing out that the company might be able to finance its expansion requirements for 1959-60 without resorting to the large offerings of convertible debentures and common stock which have characterized the postwar period to date. Depreciation charges are rising rapidly while construction expenditures may now begin to decline. This might work out somewhat as follows (figures in millions):

	1958	*1959*	*1960*
Depreciation Charges	$ 860	$ 950	$1,000
Retained Earnings	250	300	300
Stock Sales to Employees	200	200	200
Senior Financing, Including Subsidiaries	1,000	500	500
Total	$2,310	$1,950	$2,000
Est. Construction Program	$2,200	$2,200	$1,800

DEPARTMENT INDEX

	Page
An Old Rumor Revived—AT&T Stock Split Coming?	396
Calendar of Proposed Utility Offerings	398
Handling of Tax Savings from Accelerated Depreciation	399
Chart—Electric and Gas New Money Financing in 1956-58	400
Tables—Financial Data on Gas, Telephone, Transit, and Water Stocks	402, 403, 404

If the amount of equity financing is sharply reduced, this might enhance the prospects for an increase in dividends. The less frequent issue of rights would reduce the supplementary income to stockholders, which has averaged nearly $2 a share in the postwar period, making in effect an average dividend of $11. Hence, the firm argued, an increase in the dividend rate would tend to offset a reduction in this supplementary income. The study concluded that "such favorable development would impart to Telephone common an investment rating closer to that now enjoyed by other growth utility equities. In any event, the present price of the shares seems to accord no value to this possibility, for even the present dividend of $9 should be able to support the going market price around 180, in view of the present intense pressure of investment funds."

STANDARD & POOR'S weekly "Outlook" for August 18th contained an article, "Stock of the Month—American Tel. & Tel.," which made similar suggestions. The service pointed out that the company has caught up with installation orders and is now giving more attention to improving the service. "Remarkable progress is being made," it was stated, "in tailoring modern telephone service to the complex and varied needs of industry and the home. Utilization of the transistor in electronic switching and automatic accounting systems is another noteworthy development. While the installation of such systems entails heavy initial construction costs, it is believed that capital expenditures of the Bell system may decline rather than increase." The article repeated the Wertheim argument that with less equity financing, shareholders would miss the frequent subscription rights, which many have come to regard as an added income.

ANOTHER advantage which might be added to those mentioned in the two articles, is the possibility of reducing the present high cost of the Bell system equity financing. Both AT&T and its subsidiaries issue common stock at $100 a share regardless of market price. (An exception, of course, is the issuance of convertible debentures by the parent company where conversion rights are less generous.) The approximate $7 value of the rights issued in September, 1956, by AT&T would have paid for a $10 dividend for perhaps five or six years, assuming that the financing could have been accomplished successfully at a cost of $10-20 a share on the new stock. From another angle, the cost of the financing was approximately 13 per cent—since share earnings for that year were slightly over $13—as compared with an average yield of less than 5 per cent. This was very expensive financing, especially considering the huge size of the issue—about $573 million of new money was involved.

The average stockholder, while he appreciates the valuable rights given to him, would doubtless appreciate it still more if the additional income were given to him regularly so that he could depend upon it. The uncertain timing of the rights issues, and the uncertainty regarding their market value, detracts considerably from their interest to small stockholders, in the writer's opinion—since many of these stockholders are widows, retired businessmen, or others of moderate means. By using the methods of financing such as are used by the great majority of utilities—either straight underwritings, or rights of a minimum value, underwritten—the Bell system could reduce the dilution of share earnings resulting from present methods. The gain could be passed on to stockholders in the form of regular income.

CALENDAR OF PROPOSED UTILITY OFFERINGS

September 1st-December 31st

Date of Bidding Or Sale	*Approx. Amount (Millions)*		*Method Of Offering*	*Probable Moody Rating**
		Bonds		
9/9	$20	Utah P. & L. Bonds 1988	C	A
9/10	10	So. Carolina E. & G. Bonds 1988	C	Baa
9/10	35	Texas Eastern Trans. Bonds 1978	N	Baa
9/10	5	Citizens Gas & Coke Utility Bonds	C	
9/15	17	Gulf States Utilities Bonds 1988	C	Aa
9/23	35	Consumers Power Bonds	C	Aaa
9/30	110	Southwestern Bell Telephone Bonds	C	
Sept.	20	Northern Illinois Gas Bonds	C	A
Sept.	7	St. Joseph Light & Power Bonds or Pfd. Stock	N	
Sept or Oct.	50	Tennessee Gas Transmission Bonds 1979	N	
10/1	25	National Fuel Gas Bonds	C	A
10/9	30	Columbia Gas System Debs.	C	A
10/17	40	Michigan Bell Telephone Debs.	C	Aaa
10/20	25	Cincinnati & Suburban Bell Telephone Bonds or Debs.	C	
Oct.	20	Transcontinental Gas Pipe Line Bonds	N	Baa
Oct.-Dec.	8	Arizona Public Service Bonds		
Oct.-Dec.	35	Northern Natural Gas Bonds	N	A
Oct.-Dec.	10	Kansas P. & L. Bonds	C	Aa
Oct.-Dec.	10	Wisconsin P. & L. Bonds	C	A
Oct.-Dec.	10	Southern Electric Generating Bonds	C	
Oct.-Dec.	8	Kansas Gas & Electric Bonds	C	A
Oct.-Dec.	7	Citizens Utilities Bonds		Baa
Oct.-Dec.	20	Texas Eastern Transmission Debs.	N	Ba
Oct.-Dec.	—	Texas Power & Light Mtge. Bonds		Aa
11/6	20	Indiana & Michigan Electric Bonds	C	Aa
11/24	5	Worcester Gas Light Bonds	C	
11/	40	Philadelphia Electric Bonds	C	Aaa
12/15	15	Long Island Lighting Bonds	C	A
Dec.	10	Kentucky Utilities Bonds	C	A
——	5	Washington Natural Gas Bonds	N	
——	20	Coastal Transmission Bonds	N	
——	10	Laclede Gas Bonds	C	A
——	4	Eastern Utilities Bonds	C	Baa
		Preferred Stocks		
9/19	24	Public Service of Indiana Conv. Pfd. Stock (Rights)		
9/23	15	Consumers Power Pfd. Stock	C	
10/28	10	Tampa Electric Pfd. Stock	N	
Oct.-Dec.	9	Gulf States Utilities Pfd. Stock	C	
Oct.-Dec.	25	Commonwealth Edison Pfd. Stock	N	
Oct.-Dec.	8	New England Power Pfd. Stock	C	
Oct.-Dec.	10	Northern Natural Gas Pfd. Stock	N	
Oct.-Dec.	5	Wisconsin Public Service Pfd. Stock	C	
Oct.-Dec.	50	Rochester Telephone Pfd. Stock		
——	10	General Telephone of Calif. Pfd. Stock		
		Common Stocks		
Oct.-Dec.	6	California Electric Power	C	
Oct.-Dec.	25/30	Union Electric		
Oct.	5	Montana Power	N	
——	7/10	Columbus & So. Ohio Electric		
		Common Stocks—Subscription Offering		
Oct.	17	Peoples Gas Light & Coke		
Dec.	4	Kentucky Utilities	N	
——	6	Rochester Gas & Electric	N	
——	2	Hawaiian Electric		

*Excluding private offerings. C—Competitive. N—Negotiated.

THE argument might be made that an increase in the dividend would be used against the company in the regulatory field. This hardly seems likely since General Telephone has increased its dividend a number of times without noticeably adverse effects and of course many electric utilities have increased their dividend rates annually for some years. Doubtless one or two state commissions noted for their antiutility attitude might capitalize on it, but the great majority of the commissions should be sufficiently enlightened to accept the company's change of policy as being fully in line with modern conditions.

Officials in the past have pointed out that, from their studies of stock splits, no permanent market advantage would be gained by splitting Telephone—a sharp run-up in price would be followed by a gradual relapse to the old level. This is quite true, but there are disadvantages in dealing with a high-priced issue which may make it less popular marketwise. A split-up might well make the stock more acceptable for institutional portfolios. While some investment companies such as Lehman Corp., State Street Investment, and Wellington Fund have very large holdings in Telephone, the majority seem to have been less interested in the stock. The insurance companies apparently hold only about one per cent of the outstanding amount as compared with larger percentages for a number of electric utility stocks. Some 287 investment companies hold 2.5 per cent of the stock, compared with holdings of 10.9 per cent of the stock of Central & South West, 15.3 per cent of Florida Power Corporation, etc.

AT&T's financial policy has been wonderfully successful in the past in gaining new stockholders. Wide stockholder interest in the company is doubtless of great value from the standpoint of good public relations and as an aid in meeting regulatory and legislative problems. Any substantial change in policy would have to be carefully considered in the light of these facts. Nevertheless, it is possible that a split of Bell's stock might yield as good results financially as the modernization of its physical plant.

Handling of Tax Savings from Accelerated Depreciation

THE utility analyst who is trying to adjust utility share earnings to a comparable basis with respect to current income tax payments encounters many difficulties. To get the real story he must study financial footnotes carefully and perhaps do a little "detective work" in addition. The mere fact that an item for deferred taxes is shown in the income account does not suffice, since this may refer only to the deferrals from accelerated amortization—not both deferrals.

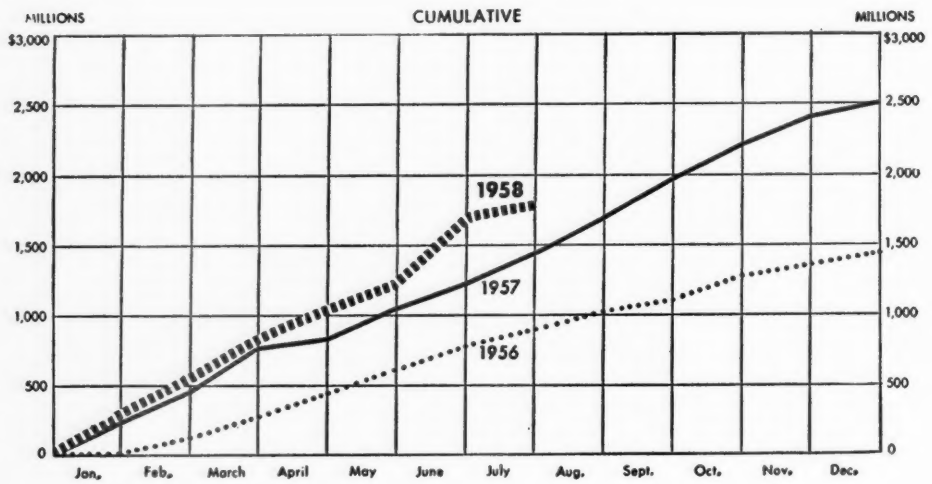
On the other hand, the absence of "deferred taxes" in the income account does not necessarily mean that deferred taxes are *not* normalized: It develops that a few companies are reporting a theoretical income tax (which they would pay without accelerated depreciation) in the income account, while part of this figure is routed to a reserve item in the balance sheet. In the balance sheet the tax savings since January 1, 1954, can apparently go into any one of four accounts: (a) a special reserve, (b) restricted earned surplus, (c) depreciation reserve, or (d) provision for accrued tax liability (in current liabilities).

Utility managements also have their problems, and must answer the following questions:

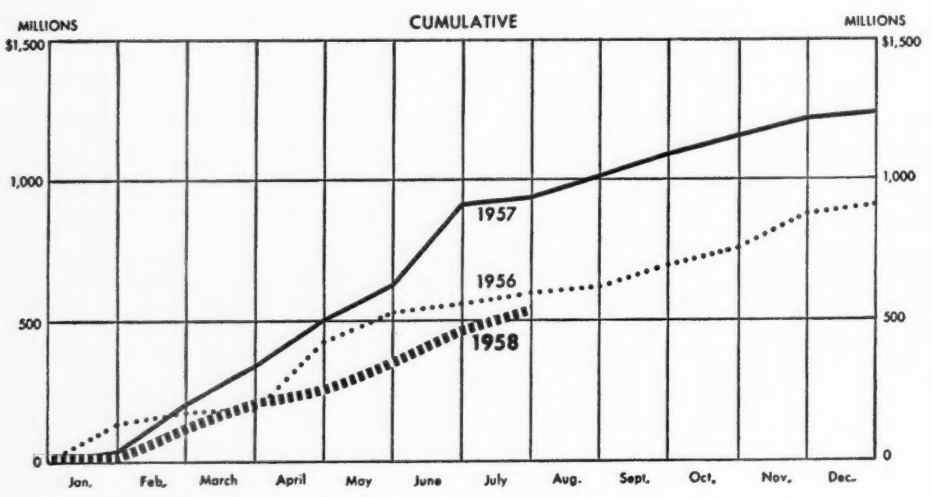
(1) Should accelerated depreciation be used, especially if the local commission

PROGRESS OF NEW MONEY FINANCING

BY UTILITY COMPANIES RENDERING PRINCIPALLY ELECTRIC SERVICE*



BY UTILITY COMPANIES RENDERING PRINCIPALLY GAS SERVICE*



* Covers companies included in the calendar with assets over $35,000,000

Source, Irving Trust Company

favors or forces the "flow through" of current tax savings to benefit consumers in rate proceedings? (2) If it is used, and regulation is not a factor, should tax deferrals be normalized, or should they be allowed to flow through into increased share earnings? (3) If tax deferrals are normalized should the amount be included in restricted earned surplus (rather than a reserve) thus reducing equity financing? (4) Another issue is whether the company should deduct deferred taxes from the rate base in a rate proceeding. This would give the consumer a benefit, though it would be a different kind of benefit than allowing deferred taxes to flow through as income.

In the past considerable space has been used in this and other departments of the FORTNIGHTLY to summarize the various views and arguments on both sides of these issues. However, it may be of interest to mention some of the arguments cited recently for a conservative policy. (These are numbered in the same order as above.)

1. A DECISION to adopt accelerated depreciation for income tax purposes should be viewed with favor by investors (especially if deferred taxes are allowed as a cost by the commission) because of the interest-free funds provided by the tax deferment, which can be used in the construction program. This is one way for a company to reduce its costs, improve its efficiency, and increase its ability to weather future storms. In addition, regulatory commissions can reasonably be expected to permit a low-cost, efficient company to earn a favorable return for its stockholders. Another possible advantage to stockholders may be nontaxability of dividends (in part or whole), especially after accelerated depreciation has been used for a few years.

2. THERE is the danger that, if the "flow-through" method is used, any repeal of § 167 of the Internal Revenue Code would be likely to have an immediate depressing effect on share earnings—particularly if "flow through" had been in use for some years. It will be recalled that some utility share earnings were threatened during the early 1940's, when excess profits taxes were applicable, because of the abnormal amounts of depreciation which had been accrued by subsidiaries of some holding companies and the resulting low plant values on the tax books. Fortunately an alternate method of calculating the tax was developed in Washington.

It has also been pointed out that if a company does not currently reflect deferred taxes as a cost, there might always be some doubt that it will be able to collect the increased taxes from its customers in future years. This could adversely affect the ratings of the securities of such a company as compared with one that currently provides for this cost.

Even if § 167 is not repealed, the earnings of a "flow-through" company would eventually be diluted if the funds provided by tax deferrals are used to pay dividends rather than to build plant. Of course the management could give some assurance that this portion of surplus would not be used for dividends, but this would not be binding on future managements and would carry no weight in a rate proceeding. Assuming that all deferred taxes should be used for dividend purposes (which of course is unlikely) it would be necessary to sell new common stock to maintain the equity ratio, and this in turn would involve a carrying charge of perhaps 10 per cent. The income cost of supporting this stock issue might, after a 10-year period, exceed the amount of the annual tax deferral, it is esti-

mated; and the disadvantage of the flow-through method would then become progressively greater year by year.

There is another danger which may be mentioned. The principal advantage of the "flow-through" period is obtained in a period of continuing rapid growth. However, if growth should level off or discontinue, as the result of a long depression or severe competition of some kind, customers and stockholders would then be asked to carry a burden which should have been shouldered long before. The failure to provide a reserve for deferred taxes would have a continuing adverse effect upon earnings for years after the flow-through benefits cease.

3. USE of the reserve method means that the tax savings do not enter the capital structure or the capitalization ratios. The pros and cons of this issue seem rather obvious and have previously been discussed in the FORTNIGHTLY.

4. DEDUCTION of the tax reserve from the rate base, in presenting the company's figures in a rate case, may appear an ultraconservative policy. Nevertheless, it is favored in some quarters as a means of keeping the local regulatory attitude on a favorable basis. Obviously, such a point of view depends largely on corporate policy and on local commission attitude and psychology. It seems doubtful whether any large proportion of the industry would follow this method. The result is the same as if deferred taxes were added to the depreciation reserve, which is required in Wisconsin.

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Annual Rev. (Mill.)			8/20/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
		Pipelines and Integrated Systems									
$ 5	O	Ala.-Tenn. Nat. Gas	23	$1.20	5.2%	$1.66Je	17%	13%	13.9	72%	41%
192	S	American Nat. Gas	60	2.60	4.3	4.08Je	6	12	14.7	64	33
58	A	Arkansas Louis. Gas	37	1.20	3.2	1.85De	19	47	20.0	65	52
57	O	Colo. Interstate Gas	46	1.25	2.7	1.98Je	NC	—	23.2	63	23
376	S	Columbia Gas System ...	19½	1.00	5.1	1.50Je	24	12	13.0	67	44
7	O	Commonwealth Gas	7	—	—	.40De	D26	—	17.5	—	77
17	O	Commonwealth N. G. ...	41	1.80	4.4	3.21Je	13	—	12.8	56	43
11	S	Consol. Gas Util.	18	.90	5.0	1.69Ap	D7	6	10.6	53	60
280	S	Consol. Nat. Gas	46	2.00	4.3	3.46Je	D2	12	13.3	58	57
18	O	E. Tenn. Nat. Gas	11	.60	5.5	.85Je	2	—	12.9	71	20
301	S	El Paso Nat. Gas	32	1.30	4.1	2.39De	13	12	13.4	54	20
46	S	Equitable Gas	34	1.60	4.7	2.24Je	6	4	15.2	71	42
24	O	Gulf Interstate Gas	15	.50	3.3	.85De	10	—	17.6	59	21
27	O	Houston N.G.	24	.80	3.3	1.87Ap	31	8	12.8	43	27
20	O	Kansas-Nebr. Nat. Gas .	39	1.80(f)	4.6	2.55Ma	9	12	15.3	71	32
109	S	Lone Star Gas	40	1.80	4.5	2.39Je	D2	10	16.6	75	43
75	S	Miss. River Fuel	36	1.60	4.4	2.00De	D14	2	18.0	80	49
26	S	Montana Dakota Util. ..	28	1.00	3.6	1.59Je	10	12	17.6	63	31
25	O	Mountain Fuel Supply ..	27	1.20	4.4	1.65Je	D2	8	16.4	73	62
86	S	National Fuel Gas	21	1.10	5.2	1.39Je	D3	—	15.1	79	58
129	S	Northern Nat. Gas	29	1.40	4.8	1.64Je	D12	7	17.7	85	34
43	S	Oklahoma Nat. Gas	33	1.50	4.5	2.18Je	13	6	15.0	69	34
117	S	Panhandle East. P. L. ...	50	1.80	3.6	2.74De	—	2	18.3	66	41
13	O	Pennsylvania Gas	23	1.20	5.2	2.18De	D3	4	10.6	55	59
174	S	Peoples G. L. & Coke ...	43	2.00	4.7	2.87Je	31	7	15.0	70	39
101	S	Southern Nat. Gas	39	2.00	5.1	1.95Je	D16	4	20.0	103	41
38	O	Southern Union Gas	27	1.12	4.1	1.53De	—	10	17.6	73	31
313	S	Tenn. Gas Trans.	31	1.40	4.5	2.00Je	50	10	15.5	70	19
175	O	Texas East. Trans.	30	1.40	4.7	2.66Je	33	25	11.3	53	18

Annual Rev. (Mill.)		(Continued)	8/20/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
96	O	Texas Gas Trans.	26	1.00	3.8	2.05Je	D6	16	12.7	49	27
97	O	Transcont. Gas P. L.	23	1.00	4.3	1.46Je	4	29	15.8	68	21
300	S	United Gas Corp.	35	1.50	4.3	2.50Je	3	12	14.0	60	41
		Averages			4.4%		7%	9%	15.4	66%	
		Retail Distributors									
28	S	Alabama Gas	32	1.60	5.0	2.73Je	24	15	11.7	59	42
44	O	Atlanta Gas Light	33	1.60	4.8	3.24My	50	5	10.2	49	33
2	O	Berkshire Gas	16	1.00	6.3	1.25My	NC	53	12.8	80	36
6	A	Bridgeport Gas	28	1.60	5.7	2.13Je	D5	1	13.1	75	50
5	O	Brockton-Taunton Gas	17	.90	5.3	1.18De	D8	43	14.4	76	41
70	S	Brooklyn Union Gas	46	2.20	4.8	3.24Je	20	13	14.2	68	42
4	O	Cascade Nat. Gas	6	—	—	Def.De	—	—	—	—	18
39	O	Central Elec. & Gas	20	1.00	5.0	1.65Ma	13	15	12.1	61	18
13	O	Cent. Indiana Gas	15	.80	5.3	1.11Je	7	7	13.5	72	67
5	O	Chattanooga Gas	6	.35	5.8	.55F	44	14	10.9	64	46
66	O	Gas Service	29	1.36	4.7	2.84Je	93	7	10.2	48	35
8	O	Hartford Gas	41	2.00	4.9	2.11My	D8	—	19.4	105	37
3	O	Haverhill Gas	21	1.32	6.3	1.95Je	D4	20	10.8	68	58
18	O	Indiana Gas & Water	22	1.00	4.5	1.54Je	5	11	14.3	65	47
48	S	Laclede Gas	19	.90	4.7	1.37Je	20	7	13.9	66	33
5	O	Michigan Gas Util.	19	1.05	5.5	1.32Je	1	18	14.4	80	34
5	O	Midsouth Gas	15	.57	3.8	.65Ap	4	6	23.1	88	39
43	O	Minneapolis Gas	29	1.45	5.0	1.85Je	D13	12	15.7	78	42
15	O	Miss. Valley Gas	23	1.20	4.8	2.39Je	73	14	9.6	50	33
5	O	Mobile Gas Service	23	1.10	4.8	1.89Je	70	—	12.2	58	35
7	O	New Haven Gas	35	1.80	5.1	2.36De	4	—	14.8	76	68
13	O	New Jersey Nat. Gas	34	1.60	4.7	2.71Je	17	—	12.5	59	35
80	O	No. Illinois Gas	21	.88	4.2	1.42Je	4	—	14.8	62	54
9	O	North Penn Gas	11	.60	5.5	.85Je	D5	8	12.9	71	58
16	O	Northwest Nat. Gas	16	.72	4.5	* .99Je	D23	4	16.2	73	39
240	S	Pacific Lighting	48	2.40	5.0	3.16Je	37	—	15.2	76	36
22	O	Pioneer Nat. Gas	30	1.40	4.7	1.74Je	NC	13	17.2	80	36
2	O	Portland Gas Lt.	12	.50	4.2	1.50Ma	127	—	8.0	33	25
9	A	Providence Gas	10	.56	5.6	.56De	D10	13	17.9	100	50
3	A	Rio Grande Valley Gas	3½	.15	4.0	.32Je	24	8	10.9	47	52
5	O	So. Atlantic Gas	14	.80	5.7	.96Se	D9	5	14.6	83	34
12	O	So. Jersey Gas	36	1.60	4.4	2.31Je	22	24	15.6	69	47
29	S	United Gas Impr.	45	2.20	4.9	2.94Je	18	5	15.3	74	64
51	S	Wash. Gas Light	45	2.00	4.4	3.44Je	36	2	13.1	58	41
11	O	Wash. Nat. Gas	14	(g)	-(h)	.55Je	45	—	—	—	41
8	O	Western Ky. Gas	13	.60	4.6	1.53Je	112	4	8.5	39	38
		Averages			4.9%		24%	10%	13.7	65%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Annual Rev. (Mill.)			8/20/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
		Communications Companies									
		Bell System									
$6,313	S	Amer. T. & T. (Cons.)	182	$9.00	4.9%	*13.17My	—	3%	13.8	68%	64%
303	A	Bell Tel. of Canada	44	2.00	4.5	2.00De	D11	—	22.0	100	66
46	O	Cin. & Sub. Bell Tel.	86	4.50	5.2	4.93De	D12	1	17.6	91	100
232	A	Mountain Sts. T. & T.	132	6.60	5.0	8.89My	D5	3	14.8	74	73
324	A	New England T. & T.	142	8.00	5.6	8.93Je	7	2	15.9	89	55
864	S	Pacific T. & T.	135	7.00	5.2	7.59My	D16	1	17.8	90	59
108	O	So. New Eng. Tel.	40	2.00	5.0	1.90De	D13	—	21.1	105	64
		Averages			5.1%		D8	1%	17.6	88%	

Annual Rev. (Mill.)		(Continued)	8/20/58 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1952-57	Price-Earns. Ratio	Div. Payout	Approx. Common Stock Equity
		Independents									
5	O	Anglo-Canadian Tel.	32	1.20	3.8	3.17Je	D2	56	10.1	38	55
41	O	British Col. Tel.	43	2.00	4.7	2.08Je	D24	5	20.7	96	31
4	O	Calif. Inter. Tel.	14	.70	5.0	.87Je	D11	—	16.1	80	24
18	O	Calif. Water & Tel.	23	1.20	5.2	1.54Je	1	—	14.9	78	48
18	O	Central Telephone	24	1.00	4.2	1.99De	—	10	12.1	50	28
5	O	Commonwealth Tel.	18	.90	5.0	1.24Je	D16	—	14.5	73	37
4	O	Florida Telephone	28	.90	3.2	1.00My	D10	1	28.0	90	46
289	S	General Telephone	51	2.00	3.9	2.92Je	NC	32	17.5	68	34
17	O	Hawaiian Telephone	18	1.00	5.6	*1.15Je	D12	7	15.6	87	43
7	O	Inter-Mountain Tel.	15	.80	5.3	.94De	17	2	16.0	85	63
21	O	Rochester Tel.	20	1.00	5.0	1.04Je	D25	—	19.2	96	33
4	O	Southeastern Tel.	20	.90	4.5	1.11De	D21	—	18.0	81	54
10	O	Southwestern St. Tel. ...	24	1.20	5.0	1.57Je	D6	4	15.3	76	35
10	O	Tel. Service of Ohio	131	1.40	1.1	7.94Ma	10	NA	16.5	18	NA
34	O	United Utilities	26	1.25	4.8	1.54De	D6	1	16.9	81	40
15	O	West Coast Tel.	21	1.00	4.8	1.29Je	D13	4	16.3	77	35
260	S	Western Union Tel.	24	1.20	5.0	2.03De	D8	—	11.8	59	85
		Averages			4.5%		D8%	7%	16.4	73%	
		Transit Companies									
21	O	Baltimore Transit	6	—	—	1.01De	124	—	5.9	—	41
12	O	Cincinnati Transit	5	.30	6.0	.52De	9	—	9.6	58	49
65	S	Fifth Ave. Coach	20	(c)	—	2.46De	D29	—	8.1	102	68
308	S	Greyhound Corp.	16	1.00	6.3	1.22De	D4	—	13.1	82	45
25	S	Nat. City Lines	24	2.00	8.3	2.74De	12	9	8.8	73	94
13	O	Niagara Frontier Trans. .	8	.60	7.5	.77De	35	—	10.4	78	78
65	O	Phila. Trans.	7	.60	8.6	1.23De	D25	—	5.7	49	38
17	A	Pittsburgh Rys.	8	.25	3.1	Deficit	—	—	—	—	90
6	O	Rochester Transit	4½	.40	8.9	.64De	D6	29	7.0	63	100
22	O	St. Louis P. S.	10	1.00	10.0	.57De	D17	19	17.5	175	94
15	S	Twin City R. T.	12	1.50	12.5	1.01De	D16	—	11.9	149	53
21	O	United Transit	5	.60	12.0	.87Ma	D1	11	5.7	69	51
		Averages			8.3%		7%		9.4	89%	
		Water Companies									
		Holding Companies									
43	S	American Water Works .	14	.60	4.3	.97Je	2	5	14.4	62	17
		Operating Companies									
5	O	Bridgeport Hydraulic ...	32	1.70(f)	5.3	2.05De	D2	5	15.6	83	53
15	O	Calif. Water Service ...	46	2.40	5.2	3.25Je	D1	6	14.2	74	33
4	O	Elizabethtown Water ...	42	2.00	4.8	3.90De	19	30	10.8	51	58
11	S	Hackensack Water	45	2.00	4.4	3.18De	11	6	14.2	63	38
8	O	Indianapolis Water	23	1.00	4.3	1.26De	D11	—	18.3	79	35
6	O	Jamaica Water	36	2.00	5.6	2.90(a)Je	—	—	12.4	69	26
5	O	New Haven Water	65	3.40	5.2	2.30De	D20	—	28.3	148	61
2	O	Ohio Water Service	27	1.50	5.6	2.05Je	D12	10	13.2	73	32
8	O	Phila. & Sub. Water	34	.50	1.5	2.93Je	D10	7	11.6	18	28
2	O	Plainfield Union Wtr. ..	58	3.00	5.2	4.42De	D12	2	13.1	68	63
4	O	San Jose Water	49	2.80(f)	5.7	3.41Je	D4	9	14.4	82	42
10	O	Scranton-Springbrook ...	21	1.00	4.8	1.67Je	10	7	12.6	66	29
5	O	South. Calif. Water	18	.80	4.4	1.13Je	D5	12	15.9	71	31
4	O	W. Va. Water Service ..	21	.68(d)	3.2	1.64Je	D5	9	12.8	41	17
		Averages.....			4.7%		7%	7%	14.8	70%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. NC—Not comparable. NA—Not available. D-Decrease. *On average shares. (a)—Adjusted to eliminate 13 cents per share of nonrecurring tax saving. (c)—Company took no action on dividends payable for the first and second quarters of 1958. (d)—Also 1 per cent stock dividend quarterly. (e)—Also 10 per cent stock dividend May 19, 1958. (f)—Includes extras (g)—Also 4 per cent stock dividend June 6, 1958. (h)—Includes special credit—reduction in income taxes of 9 cents a share.

What Others Think

The Financing Outlook for the Utility Industry

THE following address was presented by Dr. Fred P. Morrissey of the University of California at Berkeley, before the Mountain-Pacific States Conference of Public Service Commissioners at Portland, Oregon, June 11, 1958:

It is undoubtedly well known to this audience that the utility industry—electric power, telephone and telegraph, gas, and water—has been making enormous demands on the capital market in the postwar period, although the magnitudes may not be common knowledge. Last year, 1957, $5.4 billion of securities were issued by these utilities (Table I, page 407). This total exceeded the sums raised in any other postwar period including that of 1954 when $4.4 billion was raised. The electric power industry has been responsible for the largest share of this capital, with the natural gas industry usually holding second position and the communications group third—although in 1955 and 1956 the voracious appetite of the Bell system exchanged the relative positions of these two.

In the past seven years it may be noted these utilities have offered about 40 per cent of total new corporate security offerings—and I include issues by manufacturing, mining, railroad, commercial, and other corporations. If we make a comparison of the security offerings of these utilities with total offerings for cash, including the U. S. government, state, and municipal securities, as well as the corporate above, we find that the proportion was 13 per cent-15 per cent from 1951-55 but increased to 17.5 per cent in 1956 and 1957. Accordingly, when put in these proportions, the demands of the utility industry for new capital become much more emphatic.

THE utilities in the eleven western states represented here today are no exceptions to this general picture. I have calculated that these utilities, some 31 in all, raised $554 million externally in 1952, and $1,054 million in the year 1957. Translated into the proportion of total U. S. utility security offerings, this means the West was responsible for 16 per cent in 1952 and 21 per cent in the 1957 period. The increasing proportion over time is worth while emphasizing. As has been noted here today, this western region is truly a growth area.

This reliance on public financing can be pointed out in another way; namely, by looking at the sources of funds for expansion in the postwar period. Looking at Table II, page 408, we have a brief résumé of the major sources of funds for the electric utility industry, Bell system, and all corporations. The ability of nonutility

business to finance internally is striking with 75 per cent of their sources of funds being generated internally, whereas Bell system produced 32 per cent and the electric industry 38 per cent from internal sources. The complements of these figures provide the relative reliance on external capital sources—and clearly indicate why the utilities have issued $28 billion of securities to the public in the past seven years. There can be no doubt that the utility industry has had to compete in the open market for large sums of money.

Now, what of the future? Can we anticipate that the recent capital requirements are likely to drop off sharply as a result of the current recession or because of the predicted decline in household formation? For the very short run, say the next six to eighteen months, there are some indications that projected expansion of facilities may be curtailed slightly, particularly if the current recession continues, as I think it might well, for another twelve months. But at the present I believe these curtailments will be merely a postponement of new capacity additions and that the electric industry will continue its expansion at a 7 per cent-8 per cent annual rate, if not accelerate it—and I can see a similar pattern for the other industries. There can be little doubt that the demands of these utilities over the past five to ten years are not greater than their future annual needs will be—and the necessity for competing for large sums of money over the next decade or quarter of a century will continue unabated. Time does not permit justifying this forecast in detail but I can indicate informed opinions of others that support it. The report of the President's Materials on Policy Commission (the Paley Report) stated that electric generatting capacity would have to be increased by about two and one-half times the 1950 level, from 83 million kilowatts to almost 300 million kilowatts, if projected needs in 1975 are to be met. This would require an average gross addition of 10 million kilowatts each year—an average we have not sustained to date.

Similarly, Philip Sporn has estimated that in 1975 the electric industry will be producing three times the current generation of 620 billion kilowatts. The summary of forecasts prepared by Dr. Morehouse for the National Bureau of Economic Research Conference on Regularization of Business Investment (Table 29 therein) while showing wide variation, substantiates the optimistic expectations of annual rates of growth of 6 per cent or more for the electric power industry. Most recently, in an address before the Pennsylvania Electric Association, Charles E. Oakes reported on a study of the national requirements for electric capacity about 1970. Starting with an estimate of $600 billion gross national product there would be a need for over 310 million kilowatts of capacity by government and private sources—or nearly 200 million more than we had in 1956. He estimated the investor-owned portion would be 250 million kilowatts, and would require an additional $70 billion investment. If $25 billion could be financed from internal sources, there would be a residual demand of $45 billion from the capital market by the private electric industry alone.

Consequently, it is entirely likely that the electric utility industry alone will raise an average of $4 billion a year over the next twelve years—an amount almost equal to the average of the entire utility industry in the past seven years.

In the communications industry the same general picture is painted, although forecasts of twenty years' duration are not available. One of the rapidly growing

operating units of the Bell system has estimated that telephones in service in its territory will almost double and total plant investment, which has increased by almost $1.5 billion since 1945, will increase by another $2 billion by 1965. This company alone can look forward to new capital requirements of over $200 million annually, whereas it has averaged about two-thirds of this amount annually in the postwar to date. It seems reasonable to expect that the recent total of $1.5 billion of security issues of the communications industry is likely to continue and be surpassed.

In the natural gas industry, shortages of available gas reserves may develop and slow down the growth of that industry, but it is reasonable at this time to expect a continuation of the unprecedented natural gas expansion particularly due to enlarging residential load and its expanded use in chemical production.

The growth predicted here for the nation as a whole, will be intensified for the West. As indicated earlier here, the most conservative estimate of population growth shows an increase of 16 per cent between 1955 and 1970, producing a population of 195-200 million persons by 1970. This same projection points to an increase of about 38 per cent or 9 million additional persons in the West between 1955 and 1970—for a total of 35 million. (By 1965, this would be about 32 million.)

This population increase will be accompanied by greater industrialization and diversification. The economic changes in this region were accelerated by World War II and the Korean War and now appear to be permanent. Defense production is a substantial element and while it was once considered temporary, its transitory nature is a thing of the past. Diversity of manufacturing, agriculture, extractive industries, and private and public

TABLE I

SECURITY OFFERINGS—GROSS PROCEEDS FROM NEW SECURITIES OFFERED FOR CASH
(Billions of Dollars)

	1957	*1956*	*1955*	*1954*	*1953*	*1952*	*1951*
All Offerings	$30.6	$22.4	$26.7	$29.7	$28.8	$27.2	$21.2
Corporate	12.9	10.9	10.2	9.5	8.8	9.5	7.7
Noncorporate	17.6	11.5	16.5	20.2	19.9	17.7	13.4
Corporate Offerings							
Bonds	10.0	8.0	7.4	7.5	7.1	7.6	5.7
Preferred Stock	.4	.6	.6	.8	.5	.6	.8
Common Stock	2.5	2.3	2.1	1.2	1.3	1.4	1.2
Electric, Gas & Water							
Bonds	3.1	1.8	1.6	2.86	1.94	1.85	1.73
Preferred Stock	.2	.4	.3	.46	.35	.31	.27
Common Stock	.55	.3	.5	.39	.74	.51	.45
Total	3.9	2.5	2.46	3.71	3.03	2.67	2.45
Communications							
Bonds	1.3	.72	.99	.61	.79	.69	.51
Preferred Stock	.04	.01	.04	.03	.01	.02	.03
Common Stock	.10	.68	.11	.08	.08	.04	.06
Total	1.46	1.42	1.13	.72	.88	.76	.61
Total Utility	5.36	3.92	3.59	4.42	3.88	3.43	3.06
% Utility of Corporate	41.5%	36%	35%	46%	44%	36%	40%
% Utility of Corporate and Noncorporate	17.5%	17.5%	13.5%	14.9%	13.5%	12.6%	14.4%

Note: Totals may not add due to rounding.
Source, SEC Statistical Bulletins 1951-58

construction will grow apace with population. This continued growth will demand utility service of a high quality available in large quantities.

Two indications of this continued growth can be noted in recent statements of two operating utility executives—E. M. Naughton of Utah Power & Light and J. E. Corette of Montana Power Company. Mr. Naughton reported that the utilities serving the Rocky Mountain area expanded at a rate almost equal to a doubling of capacity every five years, as compared with a national average of about eight years. He expected that construction expenditures for the next five years would be maintained at least at the record levels of the past two years.

J. E. Corette, reporting on the Northwest, noted that in the past ten years the investor-owned utilities have added one million kilowatts and will add 1.7 million kilowatts more from 1958 to 1960. He estimated that $3.5 billion will be spent by federal and nonfederal agencies in the next ten years—with the nonfederal agencies providing $2 billion of this amount.

THE financing of these capital requirements is a task of no mean magnitude—and promises a continuation of postwar financing problems. It emphasizes clearly the urgent need to continue an adequate level of earnings, strong capital structures, and every efficiency in management. Earnings must be maintained at levels which are attractive to the equity investment market. As one financial expert pointed out, the trend in earnings and the ability to secure equity money provide the base for successful senior financing—therefore, if adequate returns are provided for the equity group, the coverage for the senior securities will be available. There is a danger present today that utilities and regulatory commissions may downgrade the importance of adequate earnings in view of the current recession, unemployment, and dislike of raising prices.

But regulation cannot take a day-by-day attitude toward this problem. It must be forward looking and recognize utility planning should be a minimum of five years ahead and that financing, including current earnings, must bear these long-run needs in mind. I suggest commissions might be well advised to work informally with the utilities under their jurisdiction to study the long-term demands they face and the financing problems to be encountered. It might also be appropriate for this group to set up their own study committee on the long-run economic outlook of this region.

TABLE II

SOURCES OF FUNDS

1945-56

	Electric Utility Industry	*Bell System*	*All Corporations**
Internal	38%	32%	75%
Reinvested Earnings		7%	31%
Depreciation ...		17%	30%
Other Internal..		8%	14%
External	62%	68%	25%
Debt	41%	23%	19%
Stock Issues ...	21%	45%	6%

* U. S. Department of Commerce Statistics.

PERHAPS it might be mentioned that rapid growth means additional risk. The fact that rapidly expanding utilities are forced to sell securities so frequently, raises the problems of uncertainty of price, market reception, and perhaps even downgrading of quality in the eyes of investors. Similarly, in these days of inflation, the addition of substantially higher-cost plant reduces the return on invested capital—a point sufficiently well established that it needs little elaboration here. This "attrition" of earnings, as it is commonly called, has been recognized by several commis-

sions including California's, by allowing a higher return in anticipation of a lower realized return in the future. Still a prevalent, yet intangible, element of uncertainty arising out of the rapid addition of plant and personnel is the possibility that the market will not be there for the increased output of service when it is available. One merely has to refer to the unsurpassed expansion of the 1920's when supply was vainly trying to keep up with actual and expected increased demand. The result was vast unused capacity for several years as the depression deepened and expected demand failed to materialize. This danger of overbuilding is particularly real for a utility because management must be prepared to meet all actual demands, yet avoid large additions that may not be needed and would not contribute to earnings. The three- to five-year planning and construction period for utilities makes reliance on long-range forecasts necessary, and therefore even the best demand projections may be in error. As I have suggested elsewhere, because rapid growth produces additional risks and uncertainties, some premium in the rate of return seems to be indicated.

WHEN one speaks of the capital market today it is worth while to mention two facts: The first is that utilities have no monopoly on the demand for funds—the very nature of the magnitude of their demands precludes any scarcity value to their securities. They have no preferred position with respect to the investing public and must compete with high earning industrial companies, the large and ever-growing demands of state and local governments with their tax advantage, the federal government with its increasing deficit, and the multitude of mortgages in the housing market, to mention the more important. Competition at favorable cost in this market is only possible if the basic financial condition of the utilities is sound.

The second fact to be noted is the mounting importance of the institutional investor as a supplier of funds to the capital market. We have long known of the importance of life insurance companies in the long-term debt area—currently they hold about 50 per cent of the outstanding debt of the utilities in their portfolios. But now we have the pension funds, and the investment trust coming into the equity market in volume. I have made an estimate for other purposes which would indicate that over 85 per cent of new corporate bond issues are going into the hands of institutional investors, and the latter are also investing enough in equity securities to buy up over 60 per cent of total new equity security offerings.

ACCORDINGLY, because of their large continuing demands for new capital, utilities cannot afford to ignore this important source of new capital and must pay close attention to the views of these institutional managers. I suspect one change that might be dictated here will be the emphasis on capital appreciation, rather than mere dividend payments as appears to have been the view of the individual investor. If so, this will call for lower payout of earnings providing a larger internal source of capital. Of course it will also mean professional management of the flow of funds and perhaps greater interest in and knowledge of efficiency in management. The actions of the regulatory agencies will also come under closer scrutiny as these informed investors direct the investment of large sums of capital. The day of the predominance of the small individual stockholder may be merely a memory—yet, at least in so far as the pension funds are concerned, utility stocks may be moving to Main Street again.

Another aspect of this growth problem concerns management almost exclusively. Efficiency of operation, flexibility, and dynamism can only be achieved with top-quality personnel. To ensure the best in management practices, utilities must strive to recruit the most capable personnel, to train them with management development programs, and to keep them happy with competitive salaries and interesting employment. My observations would indicate that utilities have not been able to attract their share of the top students upon graduation from college. This means, of course, that the group from which top management will be selected a decade or two hence will be of a lower quality. In an industry growing rapidly and needing dynamic ability, the quality and training of its leaders should not be neglected. To do so is false economy indeed.

In conclusion I might summarize briefly. The postwar history of the utility industry has been characterized by rapid growth and large demand on the capital market. The next decade promises more of the same, perhaps with some intensification of the problems encountered. The eleven western states represented here have made increasingly larger demands on the capital market, a trend that is likely to continue. Continued successful financing in a competitive capital market means adequate earnings over the long pull. Regulation cannot jeopardize the success of the utility growth by taking a short-run view of earnings. On the other hand, excessive earnings above financing needs and compensation for the risks of the industry will invite adverse public reaction. Utilities must look at the rising importance of the institutional investor as a supplier of funds and adjust their financial policies accordingly in so far as possible. Also, it seems necessary to pay much closer attention to the attraction of quality personnel through adequate remuneration, satisfying employment, and modern training methods.

While providing no panacea, these suggestions will make the road ahead much easier for the utilities, consumers, investors, and the economy as a whole.

Adequate Rates and Service Improvements

Can a regulatory commission deny a rate increase to a utility upon the grounds of poor service or failure to make improvements in its facilities? How is the utility with a record of efficient operation and good service benefited when it does business with the commission? How does a commissioner form his impression of a utility?

Answers to these questions and others were given with lucid cogency by Cyrus J. Colter, commissioner of the Illinois Commerce Commission, in a speech at the fifty-third annual convention of the Illinois Telephone Association. His remarks, while directed to the telephone business, are equally pertinent to gas and electric utilities.

Commissioner Colter emphasized that a utility cannot be penalized for inefficient operation by refusal to grant a rate increase, although at various times commissions have sought to do just that. He cited the case of the Elyria Telephone Company in Ohio (98 PUR NS 246) where the regulatory body approved a rate increase as just and reasonable. Such objections were raised, however, that a rehearing was held at which the commission reduced some of the proposed rates and suspended all of the others. It also reinstated the old rates until certain improvements in service

and facilities were made. A restriction was also placed on future dividends of the company. Said Colter:

> On appeal the supreme court of Ohio reversed the commission on both of these points, holding that the commission had authority to regulate both rates and service, but that it could not make adequate rates contingent upon service improvements.

This ruling, the commissioner contended, is about as clear a presentation of the legal issue involved as could ever be expected. He said there was no controversy in this case about the value of utility property and no argument about the proper rate of return or the proper expenses. The commission simply refused to allow a fair return as long as the service was unsatisfactory. The court held, Commissioner Colter said, "that the commission could not do this and particularly pointed out that if the utility was not allowed a fair return it would not be able to attract the capital required to buy the equipment needed to improve the service. The commission had the duty to fix fair rates. It could also order service improvements, but it could not make one dependent upon the other."

At about the same time, Commissioner Colter related, the Florida commission tried to do the same thing (1 PUR 3d 18). It found that the Florida Telephone Corporation was entitled to a rate increase of 18 per cent, but nevertheless refused to order any increase so long as the company's service was not improved. The Florida supreme court set aside the order and cited the Ohio case (3 PUR3d 145, 70 So2d 508). It ruled that in Florida law, service and rates are dealt with in separate sections and held in essence these two subjects must be covered in separate proceedings.

Rulings that spell out a commission's procedural approach need not render it impotent in dealing with cases of bad service, Commissioner Colter pointed out. For the commission has considerable discretion as to the exact level of rates it may prescribe. He said:

> . . . It [the commission] must determine the fair rate of return and the fair value of the plant, but I do not have to tell you that these findings necessarily involve much discretion on the part of the regulatory body. Even after a commission has arrived at its conclusions on these points, there still remains a zone of reasonableness within which such rates may vary. . . .
>
> It has been my experience that a company whose service to the public is below standard is also a company that must be watched on other matters as well. Generally its books and records are not properly kept and its reports to the commission are not filed on time, or, when filed, are not properly prepared. . . . you will see that I am attempting to show that a company's shortcomings in this kind of situation go beyond failing to render proper service to the public and go over into the area of inefficient operation generally. And this is bad, because a commission's confidence in the efficiency of a company's whole operation is shaken. It cannot be sure, without extended investigation, that all claimed items of expense are valid; that there has been a determined and effective effort to keep operating costs down; that expenditures were made for the proper purposes; that certain reserves are proper; that proper credit is taken for all proper revenues; that the company's rural line extension policy is fair; and that a conscientious effort has been made to sell the service and maintain good public relations.

MANAGEMENT is not the domain of a regulatory body, the commissioner admitted. But when it appears that management is weak or inept, the commission has misgivings about granting rate increases. For it cannot be sure that the overall effect will actually strengthen the company to the ultimate advantage of the public and its investors.

Commissioner Colter declared that rates alone are not the answer to many utility problems such as competition for its share of the consumer's dollar. Management must be able to stand on its own ability, initiative, and resourcefulness. The commission can only authorize an earnings level, but management must go out and attempt to realize its earnings through the sale of its services.

On the subject of utility earnings, the commissioner has a singularly perspicuous viewpoint. He quoted from the General Telephone Company rate case in which he wrote the concurring opinion back in 1952 (98 PUR NS 301):

> . . . the increase in rates granted here will enable the General Telephone Company of Illinois to continue to finance its large program of plant construction and improvement. This program is absolutely necessary in order to provide its subscribers with the caliber of telephone service which the public wants and deserves.
>
> The fact that this company has raised sums of money in the past is no warrant for assuming that it can continue to do so, since the suppliers of capital will inevitably look askance at the continuing demand for money to provide service unless the company receives revenues with which to supply the returns which capital must have.
>
> In my view, the net result of this approach is more in the public interest than a course of regulation which, it seems to me, must ultimately eventuate in deterioration in the quality of service to the public.

SOME of the things that help give a commissioner his impression of a company are the way it files its reports. Are they on time, properly prepared? Are there an undue number of complaints registered against the company? Over a period of time, an opinion is formed of a company in much the same way that opinions are formed of people—on the basis of what they do and how they do it. Commissioner Colter admitted that the commission likes companies with good service reputations and efficient managements. He explained:

> . . . As a practical matter, to be very frank about it, this makes our job easier. It has been my experience that the most bitterly fought rate cases are those in which the public feels that it is not getting good service for its money. But when the company bears a good reputation with the public and therefore, most probably, with the commission too, the commission, at a time when it is beset by other complex problems, naturally views with great satisfaction the record and standing of this company and has a definite desire to see it do well. . . .

And in a situation like this, Commissioner Colter emphasized, the commission will do all it can to see that a company does well, because the company is fulfilling its mission of "rendering good service to the public." This attitude on the part of a commission, he said, is not only natural and human, but is sound and desirable because it is, in the final analysis, "the most direct route to overall good service in the public interest."

The March of Events

Persian TVA in Iran

IN an area of 58,000 square miles partly bordering on the Persian Gulf, Iran has a planned development of irrigation, power, industry, and agriculture which upon completion will resemble America's Tennessee Valley Authority. Iran's Development and Resources Corporation virtually has the future of the big area in its hand. It has more authority and responsibility than usually is given to foreign experts by an Asian country.

To run the job Iran has hired an engineering company headed by two men who used to run the TVA—David Lilienthal and Gordon Clapp. The American company will practically work as a department of Iran's planning group called Plan Organization. This company, with Plan Organization's approval, will name priority projects, advertise for bids, and award contracts. The largest immediate project is a dam on the Dez river. It will be 630 feet high, irrigate 375,000 acres, and produce 520,000 kilowatts.

AEC to Lease Heavy Water

THE Atomic Energy Commission has announced that it will lease or sell heavy water for use in domestic or foreign research medical or testing reactors. Formerly such transactions were on a sale basis only. Users will now have a chance of either leasing the material at 4 per cent a year of the sales price or purchasing heavy water at the established price of $28 per pound.

The possibility of leasing heavy water will serve to reduce substantially the cost of reactor projects and thus encourage use and development of heavy water reactors. The policy will also make more funds available for research and development to advance the peaceful applications of nuclear energy here and abroad.

Alabama

Oppose Gas Rate Hike

THREE cities have tangled with the Alabama Gas Corporation in strong opposition to a proposed rate increase. They are Birmingham, Gadsden, and Tuscaloosa. The company had asked for a rate increase in April, shortly after the Federal Power Commission approved a hike in rates charged by Southern Natural Gas Company, which supplies the Alabama firm. The state commission approved the higher rates for Alabama Gas

consumers on a temporary basis. Hearings now being conducted are designed to make the schedule permanent.

An attorney for the city of Birmingham raised a point about the automatic price adjustment clause. He pointed out that the utility had already entered into another contract with Southern Natural Gas which could conceivably lead to another rate increase by the utility. Alabama's vice president, H. P. Jones, insisted, however, that the company had not made any plans for this additional rate increase.

California

Fights Tri-Dam Tax

THE Pacific Gas and Electric Company has disputed a state contention that it can be taxed for buying power from publicly owned water projects such as the Tri-Dam facility in the San Joaquin valley. The company filed a brief with the state board of equalization, in which it denied a contention of the board's staff that the utility company's contract to buy electricity from the Tri-Dam facility amounted to a taxable "possessary" interest in the project.

The utility used as its basic argument the fact that it does not own either the dam or the powerhouse of the Tri-Dam project but only purchased power on a contract basis. In addition it said that representatives of several districts now studying irrigation projects similar to the Tri-Dam facility had told the board that the dams could be built only if the districts could sell power at full market value. The company argued that it would have to reduce the price it could pay for power in order to pay any taxes assessed against it.

Plan Big Gas Purchase

TWO distributing subsidiaries of Pacific Lighting Corporation have announced plans to enter into a long-term contract to purchase 550 million cubic feet of out-of-state gas per day to meet rising energy needs in southern California. Southern Counties and Southern California Gas Companies signed an agreement with El Paso Natural Gas Company.

The new project is a modification of a plan announced earlier to bring 400 million cubic feet of gas daily into that area. The pipeline will originate at Rock Springs, Wyoming, and deliveries are scheduled to start January 1, 1960. They will increase in stages until the entire amount is reached on January 1, 1964.

District of Columbia

Fare Boost Approved

THE public utilities commission has granted fare increases sought by the D. C. Transit System, Inc., but denied a request for a $25 million rate base, keyed to gross operating revenues, for figuring fares and profits.

Fares under the new rates will be a flat 20 cents, with school children paying 10 cents instead of the former 7½-cent rate. In addition, the PUC agreed to eliminate the 90-cent weekly pass which entitled riders to a 10-cent fare.

The chief accountant of the PUC recommended reducing the present rate base from $17 million to about $10 million, but the commission compromised on a system rate base of $14 million. Under this new rate base, the expected net cash annual return of $874,539 would give the D. C. Transit a return of 6.17 per cent.

Illinois

Dynamic Gas Future

THE employee publication of the Northern Illinois Gas Company predicts a new era of energy concepts and uses will come about through current research in the gas industry.

The use of atomic energy to produce inexpensive pipeline gas from coal or water is being studied, the magazine reports. Efficient gasification of huge coal reserves by other than nuclear methods shows excellent promise of converting nature's vast coal deposits—even low-grade coal now uneconomical to mine—into gas of high heating value.

According to the Institute of Gas Technology in Chicago, there is now an efficient method of converting oil-bearing rock into gas that has excellent burning properties. The magazine also predicts that the day may come when an underground gas pipe will bring all the energy needed by the home. It says in addition to heating and cooling, gas may be used to operate all lights and appliances.

Massachusetts

First Rate Hike in Thirty-Eight Years

A REQUEST for an electric rate increase averaging just under three cents a day for residential customers was filed recently by Northern Berkshire Electric Company with the Massachusetts Department of Public Utilities.

The rate schedules filed with the department are expected to result in additional revenues of $219,000 a year before taxes. However, Northern Berkshire President Richard E. Pierce pointed out the actual dollar return to the company will be about one-half that amount, or $111,000 after federal income taxes.

The application for the rate increase was the first asked for by the company since 1920. Before becoming effective the rates must be approved by the state regulatory body. The new schedule calls for increases of $140,500 annually to residential customers, $69,500 to commercial and industrial customers, and $9,000 for street lighting.

In making the announcement Mr. Pierce explained that the company has been fighting a losing battle against rising costs since 1950 when rate decreases were put into effect in the Northern Berkshire area. Since then, he said, "costs beyond our control" have gone up and continue to go up.

The company president said that electric rates have been reduced to Northern Berkshire customers by over $267,000 in the last twenty years.

New Jersey

Electric Data Needed for Gas Rate Hike

THE public utilities commission has ordered Public Service Electric & Gas Company to include in its petition for gas rate increases all pertinent data relating to the operations of the electric department. The commission contended that the original petition presented by the company did not allow the commission to ascertain reasonable and allowable revenues and failed to list all electrical as well as gas plants and properties used for both gas and electric service.

The company lawyer argued that PSE&G was under no obligation to establish the value and rate of return for its electric properties in order to justify an increase in the gas rates. Moreover, he said there was no precedent for considering the dual operations of a company as a whole. The commissioners said that they felt it necessary in the interest of a fair and reasonable determination of this rate matter to examine both the electric and gas departments' operations.

Texas

Gas Line Dispute

HOUSTON'S Commissioner V. V. Ramsey sought the aid of the state's attorney general in getting an injunction to block installation of a gas pipe under Lake Houston. His efforts, however, met with no success. The city council had agreed to authorize Magnolia Petroleum Company to install a gas line under Lake Houston despite protests by the head of the antipollution division of the county health department that it would result in pollution of the water if leaks should develop.

This theory, however, was disputed by a doctor arguing for the petroleum company. Fearing a gas line might jeopardize the city's drinking water as well as marine life under the lake, the proposed installation was objected to by some Houston citizenry.

Virginia

Utility Taxes Assessed

THE state corporation commission has assessed Virginia public utilities a total of $19,952,034 in state taxes for the year ending June 30th, which is about $1.5 million more than 1957. The total state taxes on public utilities included $9.8 million for railroads, $5.8 million for power companies, and $2.7 million for telephone companies.

The largest public utility taxpayer was Virginia Electric & Power Company, which paid taxes totaling $4,179,820. The Chesapeake & Potomac Telephone Company stated its taxes amounted to $2.3 million.

One public utility in Virginia which does most of its business in Maryland and the District of Columbia was assessed only $78,000 in state taxes.

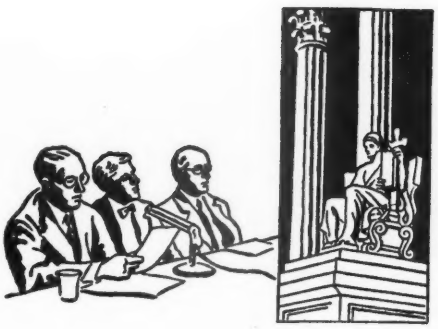
Washington

Two 50-year Contracts

PORTLAND GENERAL ELECTRIC COMPANY has signed two 50-year contracts that will yield it a total of 331,000 kilowatts of additional power. The contracts are with two PUD projects, one at Priest Rapids and the other at Rocky Reach. The first will supply 207,000 kilowatts and the second will furnish 124,000 kilowatts for PGE's transmission system.

The power will be relayed to PGE over the high voltage grid of the Bonneville Power Administration. The two contracts were signed by Frank M. Warren, Jr., president of the Portland utility, William A. Pearl, BPA Administrator, and two representatives of the PUD's.

The Priest Rapids project, capable of producing 788,500 kilowatts, is scheduled to go on the line next summer and be completed in 1961. The Rocky Reach plant is due for completion in 1962, with first power generation in 1961.



Progress of Regulation

Trends and Topics

Recent Views on Rate Concessions to the United States

THE delineation of state power with respect to utility rates for intrastate service to the federal government is a continuing process. While our fundamental law recognizes the general areas of state and federal powers, the precise boundaries are determined as specific need arises. Since the discussion on "Rate Concessions to the United States," in PUBLIC UTILITIES FORTNIGHTLY, November 21, 1957, at page 883, important rulings affecting state power over rates to the federal government have been handed down.

Supremacy of Federal Law

The United States Supreme Court has upheld a district court decision (14 PUR3d 300) which declared unconstitutional a California statute permitting carriers to grant reduced rates to the federal government only upon approval by the state commission (23 PUR3d 55). Whether the United States can be subjected to the discretionary authority of a state agency for the terms on which, by grace, it can make arrangements for transportation services is a constitutional question which the commission cannot be expected to entertain.

Under the supremacy clause of the Constitution, Article 6, Clause 2, the statute was struck down since it was in conflict with the federal policy of negotiated rates, as reflected in armed forces regulations. These regulations, which have the force of law, entrust federal procurement officers with discretion to determine when existing rates will be accepted and when negotiation for lower rates will be undertaken. The state statute would impose a restraint or control on federal transportation procurement. Quoting Chief Justice Marshall, the court observed, "It is of the very essence of supremacy to remove all obstacles to its action within its own sphere, and so to modify every power vested in subordinate governments as to exempt its own operations from their own influence."

Nor was the district court's judgment barred by the Johnson Act, which prohibits federal courts from interfering with state rate orders in certain circumstances. The challenge in this case was to a statute, not a rate order.

Three dissenting justices thought, however, that the fact that the government may not receive more advantageous shipping rates in California than those applicable to other intrastate shippers was not sufficient by itself to vitiate the state statute, absent an express federal policy to nullify state regulation. They further indicated that the economic incidence of state price regulation upon the federal government would not alone give rise to an implied constitutional immunity from such regulation.

The Pennsylvania supreme court, reversing a lower court judgment (21 PUR3d 81), held that the state commission could not regulate rail rates for intrastate transportation service to the federal government (United States *v.* Pennsylvania Pub. Utility Commission, June 30, 1958). The commission had enjoined a railroad from charging the government rates other than those filed with the commission, after holding that such rates were in violation of state law. The Pennsylvania Public Utility Act prohibits a carrier from transporting property for "any person, corporation, or municipal corporation" at a rate less than those contained in published tariffs, or granting any such shippers an unreasonable preference or advantage.

The court did not rule on the question whether the United States was included in the statutory description. It based its holding in favor of the government on the Supreme Court ruling in the California case discussed above.

State Lacks Jurisdiction over Service to Air Base

Of parallel interest is a recent decision of the North Dakota commission dismissing, for lack of jurisdiction, an application by a telephone company for authority to serve an Air Force base (24 PUR3d 84). Besides requesting a certificate for itself, the applicant asked the commission to revoke a certificate previously granted to another company in the area.

The air base territory was purchased by the federal government under a constitutional provision giving the government exclusive jurisdiction over it. The state of North Dakota consented to the purchase. When jurisdiction over the territory was transferred, the commission observed, the authority of the state ceased. From that point hence, the commission was without power to grant or deny a certificate to construct telephone facilities in the territory.

Pointing to the Supreme Court decision in the California case, the commission held, moreover, that its action on the application was also barred by another principle of law. State laws cannot be permitted to interfere with the carrying out of a national purpose. If the enforcement of a state law will handicap federal plans, the state enactment must give way. The commission was being asked, it was noted, to revoke one company's certificate and grant a certificate to another company—to determine, in effect, with whom the government may contract.

The Secretary of the Air Force is directed, under a federal statute, to utilize the facilities of telephone companies within their respective service areas, though only "to the fullest extent practicable." Services of other companies may be required in particular circumstances. The decision is left to the Secretary. To take jurisdiction in this case, said the commission, would be to assume

a power of review over the Secretary's decision, and even a complete veto power over the federal project, since the state agency could then deny all applicants the right to serve the federal installation. This, it was held, the supremacy clause of the Constitution forbids.

Review of Current Cases

Commission Adjusts Working Capital and Rules on Fair Value, Tax Deferrals, and Billing Demand

In approving a 7.3 per cent rate increase for the Commonwealth Edison Company, the Illinois commission discussed working capital at length, concluded that the traditional 45-day allowance would be increased to fifty days to more reasonably approximate the delay in effective reimbursement of operating expenses through revenue receipts.

Tax accruals had been used by the company to supply the substantial bank balances required in its operations and, accordingly, the company had not added the average bank balance during the test year to working capital requirements. The overplus of tax accruals had been invested in short-term high-grade securities from time to time.

The commission did not consider management policy in this regard unsound, since tax funds can only be used on a temporary basis. Nevertheless, the commission required that income from such short-term investments, in excess of tax accruals required for minimum bank balances, be included in the income account for the purpose of determining return requirements. This was to insure that the full effect of such temporary benefits would inure to the ratepayers.

The city of Chicago had urged that the requested allowance for working capital be reduced by the available minimum tax accruals remaining after bank balance requirements. The commission did not regard it as sound policy to insist that management invest in coal inventory, materials and supplies, or even operating expenses, amounts set aside for taxes. The company had accounted for the full income received by it from investments representing amounts to be used for taxes, and such income had been added to revenues in computing net operating income for rate-making purposes.

The city also contended that the company's reserve for deferred income taxes, arising from the use of accelerated depreciation for federal income tax purposes, be deducted from the working capital requirements. Since the commission had taken account of the reserve in arriving at the fair value rate base, it considered it to be a duplication to take account of the same for working capital purposes. In either case, pointed out the commission, the reserve would represent a deduction from the rate base used for rate-making purposes, and the consumers given the full benefit arising by reasons of adoption of accelerated depreciation.

Fair Value

The commission was under a statutory obligation to use a rate base which represented the present fair value of the utility property arrived at after full and proper consideration of reproduction cost and

a reasonable return, based upon appraisal of opportunities available for investment in other enterprises. In considering depreciated original cost as a component of the fair value rate base, the commission regarded year-end figures as more significant than average test period figures because the 40 per cent increase in net plant during the test year approximated in size the deficiency in reserve capacity which the company actually experienced during the test year. Also, a long period had elapsed since the end of the test year so that the rate base dedicated for public use was considerably greater than the one evaluated at the close of the test year.

In its reproduction cost appraisal, the commission pointed out that the validity of the Handy-Whitman Index for trending had long been recognized. It refused to rely upon spot price levels in determining reproduction costs. The possibilities of price adjustment and the size of the property made an average of price levels for an appropriate period preferable.

Income Adjustment

The commission adjusted the company's income downward to reflect operation of a new generating unit for the full test year, notwithstanding that it had gone into operation prior to the close of the test year. Had the new unit been in operation during the entire test year, the commission pointed out, the operating and maintenance schedule would have been rearranged so as to permit the performance of maintenance necessarily deferred because of the lack of sufficient reserve capacity.

Deferred Federal Income Taxes

The full amount of the current provision for deferred federal income taxes, without regard to the date payment might be due, was allowed as a current expense. The benefit of the tax deferral was passed on to ratepayers through the adjustment of the rate base.

The legislative objective of Congress would be thwarted, the commission pointed out, and undue discrimination between regulated and nonregulated industries would be introduced were the commission to deny utilities the same tax treatment provided by the code equally for all concerns. The company had adopted the declining balance method of accelerated depreciation. Accumulated deferred tax reserves, set aside under a previous accounting order, provided interest-free funds for plant expansion from which the ratepayers, both present and future, would derive the full benefit.

The commission felt that the same standards of fairness applied to the deduction from the rate base should be applied to the expense treatment of deferred taxes.

A tax deferment, it said, is not a tax savings. Even if, as some regulatory authorities had contended, the deferred income taxes would be indefinitely deferred, there could be no detriment to the company's customers. In that contingency, there would be a permanent reduction of the company's rate base. To whatever extent the deferred taxes became payable, the reserve would be available until exhausted. To whatever extent the reserve was not used, it would operate as a continuing reduction of the company's rate base.

Rate Schedules

The increase authorized would produce a return of 5.85 per cent, which the commission considered reasonable. Some of the company's proposed rate provisions, however, were modified, particularly the ones dealing with billing demand.

The company had proposed that determination of the point at which a demand meter was to be installed should be left to managerial discretion, that the provision would be self-policing, because if the company set the point at which such meters were to be installed too high it would lose revenues, while if it was set too low the purpose of the provision for dispensing with demand meters for small customers would be defeated. Although the commission considered the proposal reasonable, it felt that its effect upon rates of charge was so direct that it should not be subject to variance by the company at will. Accordingly, the provision was modified by setting out actual figures as the criterion for providing a demand meter.

The company had also proposed establishing a 100 per cent 24-month roll for billing demand. The commission changed the provision so that the billing demand for any month would be the higher of (1) the customer's highest maximum demand in the 12-month period ending with such month, or (2) 75 per cent of his highest maximum demand in the 24-month period ending with such month.

The company had proposed that a customer be released from billing demand obligations after an initial contract term only if he has disposed of or permanently abandoned the premises. The commission considered this too harsh. The provision was changed so that customers could be released if they had disposed of, or permanently abandoned, operations at the premises. *Re Commonwealth Edison Co. 44391, 44551-44555, June 18, 1958.*

Increased Return Allowed in Recognition of Attrition and Loss of Investor Appeal

THE Maryland commission has authorized a $9,254,000 increase in the gross revenues of Baltimore Gas & Electric Company, calculated to afford a rate of return of 6¼ per cent on the fair value of the property devoted to electric, gas, and steam services. The allowed return is one-quarter of one per cent higher than the maximum return authorized in recent years.

Attrition Reduces Earnings

The commission noted that the company has actually earned but 5.35 per cent on a terminal rate base during the last twelve years. One reason recognized was the effect of attrition. The company has been expanding its plant in a substantial way during the postwar years, adding new property at an ever-rising cost. This, coupled with an increase in tax and operating expenses and climbing capital cost, has resulted in a lower actual rate of return than the authorized rate.

A witness asserted that over the twelve postwar years the company has failed by almost $20 million to meet the maximum allowed rate of return because of the commission's failure to anticipate the constant erosion of the company's return due to increased costs or attrition. During the same time, he pointed out, not only have rates remained approximately constant but operating efficiency has increased.

The commission recognized that a terminal rate base must be used in order to permit the company to retain even its present operating income, much less to afford some element of relief, the necessity for which was amply proven. Besides protecting against attrition, a terminal rate base also helps to offset the deleterious effects of regulatory lag.

Investor Appeal and Return

The commission was obviously impressed by testimony that the company's stock had sustained a loss in investor appeal. One witness stated emphatically that deterioration in the investment position of the company's stock would accelerate if the present inadequate earnings continue. Another company witness testified that some of the reasons for this loss of prestige must be attributed to the company's failure to maintain the standard set by Moody's "24 Utilities" in earnings per share, dividends per share, and average price per share of common stock. Moreover, the progression of the company's stock to a relatively high dividend yield was said to be indicative of weakness in its comparative investment standing.

At the rate of return which the company had been earning, the commission recognized that the company had lost prestige in the eyes of investors. A continuation of this situation would force the company to pay more for its money, ultimately requiring increased rates. In the light of circumstances existing today, said the commission, the 6 per cent rate of return, as previously authorized, is not now adequate. Although the company asked for 6.5 per cent, the commission thought 6.25 per cent was sufficient and limited the return on each of the three services to that rate.

This allowance assumed debt cost of 4 per cent, preferred stock cost of 4.75 per cent, and equity 8 per cent. The overall cost of capital was determined to be about 5¾ per cent. This was based on a capitalization of 50 per cent debt, 10 per cent preferred stock, and 40 per cent equity, which closely corresponded to the 1949-57 averages.

Current Cost Rejected

The company presented "current cost less depreciation" figures for existing plant as of the end of 1957, based on July prices for the same year. The total amount thus determined was $606,566,973. On the basis of this figure, the company arrived at a fair value rate base of $575 million.

The commission noted that there was no evidence that this may not in fact be a reproduction cost figure. Reproduction cost, it was held, is not the equivalent of fair value. The use of a current or reproduction cost rate base in a period of rising prices, the commission observed, permits a company to reap a return on money never invested. On the other hand, in a period of declining prices, such valuation results in the denial of a return on money actually invested. The commission fixed a terminal fair value rate base of $423,855,000.

Since the rates which the company had already put in effect for gas and steam would not produce a return of 6.25 per cent, they were approved. However, the proposed electric rates would result in earnings of 6.33 per cent. They were consequently ordered reduced. *Re Baltimore Gas & Electric Co. Case No. 5554, Order No. 53662, July 11, 1958.*

Zone of Reasonableness Applied to Telephone Exchange Rates

THE Wisconsin commission, in authorizing a telephone company to increase rates which would produce a return of 6.1 per cent on a net investment cost rate base, discussed the allocation of revenue increases among the various exchanges.

Within the framework of a reasonable and logical rate structure, the commission said, it believed that each exchange in each major classification of service should stand on its own feet, and in no event should be subsidized by excessive rates at other exchanges, or for other classifications of service.

However, the commission also recognized that there is a zone of reasonableness within which a reasonable rate of return may fall. This zone lies somewhere between the lowest rate that is not confiscatory and the highest rate that is not excessive or extortionate.

So long as the service rates and rate of return for any municipality are not unreasonable, pointed out the commission, no right of such municipality is invaded by different service rates and rates of return at other exchanges. In appraising relative exchange rate levels, consideration should also be given to the fact that the average toll use at the smaller exchanges exceeds the average use at the larger exchanges. The commission increased the revenue allocations among the company's 62 small exchanges to more closely approximate the overall percentage increase. *Re Wisconsin Teleph. Co. 2-U-4904, June 27, 1958.*

Line Extension Gives Electric Company Service Priority over Co-operative

NORTHERN STATES POWER COMPANY has a right to continue serving a new school to the exclusion of Pierce-Pepin Electric Co-operative, the Wisconsin commission held in a declaratory ruling requested by the company.

Northern States had extended a single-phase line to the school premises to provide temporary service to a contractor during construction. There was some evidence of an agreement between the two utilities to the effect that temporary service to the contractor would not afford any priority with respect to the right to serve the school on a permanent basis. A statute relating to duplication of electric facilities provided that no electric utility should extend service to any premises being served by another electric utility.

The commission said it must look at the language of the statute. It refused to give any weight to any agreement that might exist between the two utilities as to the legal effect of the temporary service to the contractor. Northern States did in fact extend service to the school premises and was providing service at the time of this proceeding. It could legally do so.

The company had therefore assumed an obligation to serve the premises and must provide adequate service within the scope of its holding out to serve. Since, under the statute, service was already being provided to the school premises, the co-operative was precluded from extending a line to the same premises, even though it offered to provide a 3-phase line in lieu of the company's single-phase service. *Re Northern States Power Co. DR-14, June 27, 1958.*

Lease-option Agreement Approved

THE California commission approved a water company's application for authority to lease its facilities to a public utility district, with an option to purchase. The commission noted that such authorization would have the effect of changing

the present owner's status to that of a lessor, or a conditional seller, of utility properties to which the company retained legal title. The result would be operation of utility services by a lessee or conditional buyer not subject to commission jurisdiction. The commission, however, in the exercise of its regulatory power, may properly concern itself with the paramount interest of the consumers or patrons of utility services, it was pointed out. The commission found that the owner of the properties was unable to provide necessary facilities for rehabilitation or expansion of service to meet legitimate public needs. The public utility district was an entity in existence which was ready, able, and willing to assume that responsibility. The commission said that it would not hesitate to authorize such a transfer under an agreement satisfactory to both parties, since the effect would be more adequate service than the present owner was able to provide. *Re March (Ivanhoe Water Co.) et al. Decision No. 56880, Application No. 39125, June 24, 1958.*

Carrier Permit Grants Upheld Despite Protests of Adequate Service

THE Tennessee supreme court upheld a commission order granting contract haulers' permits to transport asphalt products in a limited area despite protesting carriers' contentions that they were providing adequate service, needed additional revenues, and had idle equipment to meet the public needs.

The successful applicants exhibited contracts with prospective customers for hauling service.

The court observed that the determinative issue in deciding whether a contract carrier's permit should issue is not the financial welfare of the applicant but the public benefit. In such a decision the commission has the widest discretion. The court, on appeal, will not undertake to weigh the evidence and substitute its opinion for that of the commission. The commission is in a far better position than an appellate court, it was noted, to express an opinion as to whether the public is being adequately or inadequately served. As there was no plain abuse of discretion, the commission's order would not be disturbed. *Blue Ridge Transp. Co. et al. v. Hammer et al. 313 SW2d 433.*

SEC Order Requiring Elimination of Unfair Voting Power Distribution Upheld

THE United States court of appeals for the third circuit affirmed an order of the Securities and Exchange Commission requiring either elimination of the publicly held minority interest in the common stock of Arkansas Fuel Oil Corporation, a subsidiary of Cities Service Company, or the disposition of Cities' majority holding of this stock. The issue was held to be foreclosed as res judicata.

Historical Background

For a number of years the commission had been exercising its § 11 powers with reference to Cities' holding company system. In the course of the numerous steps required and taken for divorcing utility and nonutility interests and otherwise simplifying the system there came a time when Cities owned about 52 per cent of

the common stock of its subsidiary, Fuel Oil, while 48 per cent of this stock was publicly held. In sanctioning the § 11(e) plan which left the common stock of Fuel Oil thus divided, the commission had noted that the continued existence of a publicly held minority interest in Fuel Oil presented a problem which might require corrective action. Accordingly, it had reserved jurisdiction over this problem.

Subsequently Cities, invoking § 3(a)-(5) of the Holding Company Act, applied to have itself and its subsidiaries declared exempt from the provisions of the statute. This application noted the commission's reservation of jurisdiction of the question of the minority interest in Fuel Oil and recited that the granting of the application for the exemption would make this reserved question moot.

In these circumstances the commission ordered a consolidated hearing for consideration of both the requested exemption and the unresolved question of what, if anything, to do about the minority public interest in Fuel Oil. The consolidation order recited that the exemption proceeding and the § 11(e) plan proceeding were related. It also listed specific questions to be considered, among them being whether the continued existence of the publicly held minority interest in Fuel Oil complied with § 11(b)(2) of the act.

The decisive finding of the commission at the conclusion of the consolidated hearing was that the existence of the public minority interest in Fuel Oil should be eliminated. Two orders followed, one directing the elimination of the § 11(b)(2) complexity, and the other denying the requested exemption.

Effect of Separate Appeals

Cities Service sought review of these two orders by different courts of appeals. Review of the order denying the exemption was obtained in the court of appeals for the second circuit. That court sustained the commission's denial of the requested exemption (21 PUR3d 90). In its opinion the court explicitly addressed itself to the question "whether the elimination of the minority interest is required by § 11(b)(2)," treating the existence of complexity requiring correction under that section of the act as decisive of the ultimate question whether Cities Service was entitled to an exemption under § 3(a)(5).

This decision made the litigated § 11(b)(2) issue res judicata in view of the accepted rule that "where there is an appeal from a judgment, the determination by the appellate court of issues actually litigated is conclusive between the parties in a subsequent action on a different cause of action."

The court believed that both branches of the consolidated proceeding turned on a single conception of what amounted to a complexity inconsistent with the standards of § 11(b)(2). The matter was not decided twice or in the light of differing criteria for the two branches of the consolidated proceeding, despite the fact that separate types of implementation appropriate to the two branches were required. Consequently the court decided that the conclusion reached by the court of appeals for the second circuit was res judicata as to the present appeal from the § 11(e) portion of the proceeding. *Cities Service Co. v. Securities and Exchange Commission, Nos. 12,428, 12,429, July 22, 1958.*

Carrier Certificate Authorizes Irregular Routes

REVERSING a lower court, the Tennessee supreme court upheld a commission decision interpreting a motor carrier certificate as authorizing irregular route transportation. In one section, the certificate expressly provided for irregular route operation between two principal points. In other sections, it authorized service between numerous specified points over specified routes, "with service to, from, and between all intermediate points." The court held that there was material evidence to support the commission's ruling.

The policy of the supreme court has been to give every reasonable presumption in favor of the lawfulness of the commission's orders, it was noted. When material evidence supports an administrative decision, it will not be disturbed. The court indicated that it would reverse a commission decision only if the rights of the parties were prejudiced because of administrative action which was arbitrary or capricious, or affected by other error of law. *Blue Ridge Transp. Co. v. Hammer et al. 313 SW2d 431.*

Stock Option Plan for Key Utility Personnel Disapproved

THE New York commission denied the Brooklyn Union Gas Company's application for authority to issue 75,000 shares of no par value common stock pursuant to a Restricted Stock Option Plan. Under the plan, approved by the company's stockholders, key personnel would be given options to purchase such stock at a price of not less than 95 per cent of the fair market value on the day of granting the option, but not less, however, than its then stated value.

The commission said that its action was not to be construed as raising any doubt that the company had a proper basis for issuing securities. It concentrated its attention upon the fundamental reason for the petition, the Restricted Stock Option Plan designed by management to strengthen the bond between the company and its key personnel.

The commission questioned the propriety of its approval of a stock issue to implement a plan which would permit the optional purchase and sale by utility personnel, depending upon the personal benefits which might accrue to each individual, of stock which determines control of that utility. It said that "the situation in the extreme would lend itself to manipulation." The commission emphasized, however, that no inference was intended as to the instant petition or any one connected with it.

In essence, the trend toward stock option plans has resulted from the tax structure confronting all citizens to a greater or lesser degree. The commission believed that whatever might be the solution, whether through modification or revision of that tax structure or through other means, the device of a stock option plan to give utility personnel remuneration subject to a lesser tax is not adaptable to the public utility situation. It concluded that the disadvantages of such a plan for a regulated utility far outweigh the advantages.

Regulation Factor

The commission considered the broader aspects of such a plan in relation to matters that are of particular and peculiar concern to public utility operation and regulation. It conceded that the success of both a regulated utility and a nonregu-

lated industry is due largely to the ability of its top management. In nonregulated industries, however, the prices to be charged are limited essentially by competition. On the other hand, the commission said, the regulated utility is a monopoly and is authorized by law to charge sufficient rates to provide a fair return on the capital actually invested in property used in the public service. While competition is still a factor, it is not usually the final determinant in the success of the enterprise. The actions and attitude of the commission are of some importance also, said the commission, and it must attempt to see that adequate service is provided at reasonable rates.

Dissenting Opinion

Commissioner Mylott wrote two separate dissenting opinions. He noted that the company's petition conforms to the provisions of § 69 of the Public Service Law, and that the terms and conditions under which the stock would be sold were just and reasonable and would not adversely affect public interest. Thus, he believed, his colleagues had, in effect, confiscated the prerogatives of the owners of the company as well as the functions of management to fulfill the mandate of the owners.

Commissioner Mylott was not persuaded by the argument that "the situation in the extreme would lend itself to manipulation." He pointed out that securities have been manipulated in past years, and in order to cope with wrongful manipulations the police powers of government, both national and state, have been strengthened considerably within the last twenty-five years. Furthermore, he said, since the commission is in a position where it must see that only a fair return is earned by the company, there should be no windfall of earnings, dividends, and capital gain except through normal growth in net income resulting from greater use of the company's service. In this connection, he said, no evidence was produced to support a finding that the recent enhancement in the market price of the company's common stock was due to factors other than expansion and greater use of the utility company's commodity.

Commissioner Mylott also took exception to the commission's statement that the device of a stock option plan to give utility personnel remuneration subject to a lesser tax is not adaptable to the public utility situation. He said that this could be interpreted to imply that a taint is attached to a Restricted Stock Option Plan when its use is intended to curtail income tax liability by utility personnel. He pointed out that not all stock option plans create capital gains—only restricted stock option plans which conform to the Internal Revenue Code. Furthermore, the commissioner said, the code makes no distinction in its applicability as between public utilities and nonpublic utilities. So long as the plan fits the code, those qualifying under the plan are not avoiding tax payments, but may avail themselves of a tax saving.

In his earlier separate opinion, Commissioner Mylott discussed at length the reasons for the proposed plan, its nature, and action taken by other regulatory bodies with respect to similar plans proposed by other utility companies. In this separate opinion, he observed that the commission has recognized that the problem of selecting the class of security to be authorized, the principal amount to be issued, as well as the method of distribution and sale of the securities, are matters for determination by management in the first instance. Under ordinary circumstances its decision is controlling, pro-

vided the terms under which the securities are to be issued do not adversely affect the public interest. He did not believe that the public interest would be adversely affected. *Re Brooklyn Union Gas Co. Case 17845, July 29, 1958.*

Rate-making Approach Explained by Montana Commission

In granting an electric company a modified rate increase which would produce a return of 5.33 per cent on a fair value rate base, the Montana commission dwelt at length upon its rate-setting approach. Once the need for increased rates has been established, the commission said, it is the practice of many regulatory agencies to determine what is a reasonable rate of return. After this percentage figure is settled, it is then applied to the rate base to determine what amount of additional earnings is necessary to provide this specified rate of return. The utility is then granted authority to charge rates which will raise its earnings to that level.

The commission considered this procedure wrong, commenting that it was more an exercise in mathematics than a judicious setting of rates. It made the actual rates incidental to the computation of revenues. Instead of making rates the mere afterthought of a revenue study, the commission believed the better approach to its inherent rate-setting duties was to study the proposed rates and revise them as reasonableness might require. The revenues which would be derived from the rates allowed would then be applied to the rate base to determine what rate of return they would bring. The return would then be examined for its fairness.

Protestants had advocated that the adequacy or inadequacy of the company's earnings was the key issue, rather than a mathematical computation of a specified rate of return upon the fair value of its plant.

The commission agreed, to some extent, with the doctrine that the end result—*i.e.*, the earnings provided by the rates allowed—was of greater importance than the formula used. It pointed out, however, that earnings have no significance when considered alone. They must be related to some standard for the determination of reasonableness, and the fair value rate base was deemed the logical one to apply.

Measures of Value

The company had presented figures on reproduction cost new less depreciation, original cost less depreciation, and assessed value. Each theory has its particular usefulness and the weight to be given any one theory depends upon the circumstances of the individual case and the characteristics of the utility plant to be evaluated, said the commission. It did not believe that reproduction cost new less depreciation must be given the dominant weight. While the reproduction theory is an important factor and should be considered, the commission has wide latitude to consider other theories.

The commission doubted whether a regulatory agency would be justified in relying solely upon the reproduction cost theory, based, in large part, upon estimates, opinions, and observations of individuals. Even though expert means are employed, there is considerable room for errors in judgment and divergencies of opinion in computing reproduction cost. Furthermore, the reproduction cost theory is predicated upon reproducing the plant in its present form. It tends to disregard eliminations which could be made in a complete reconstruction.

In this case, the studies assumed the piece-by-piece reproduction of the company's plant at the substantially higher levels of present-day prices. Actually, the company would not rebuild its entire plant exactly as it exists. It would take advantage of various technological advances and the lessons of past experience.

Original cost and original cost less depreciation have the preciseness and ease of determination which the reproduction theory lacks, observed the commission, and are sound indications of value when the major part of a utility's plant has been built in recent years. In this case, however, large portions were built in previous decades at considerably lower price levels. This had to be taken into consideration in weighing the reliability of the two valuation methods.

Assessed value, standing alone, was not considered a sound criterion of physical value. However, it did have a relationship with the other standards of value and, therefore, deserved consideration.

Rate Base Exclusions

Plant under construction, land held for future use, and contributions in aid of constructions were held to be proper exclusions from the rate base, since ratepayers should not be required to pay a return upon plant items which have not actually been placed into use for the benefit of the public, or upon moneys which have been furnished by the customers instead of the investors. That portion of the materials and supplies allowance which was used for new construction was likewise eliminated from the rate base. No allowance was made for cash working capital since tax accruals were sufficient to meet all cash needs. *Re Montana Power Co. Docket No. 4550, Order No. 2723, June 23, 1958.*

Radiotelephone Operators' License Suspension Upheld

THE United States court of appeals affirmed a judgment upholding the Federal Communications Commission's suspension of radiotelephone operators' licenses. The commission had found that the operators, immediately prior to walking off their jobs pursuant to a strike, had manipulated and dislocated various controls and connections and accessories at the transmitter so that it could not have been started as scheduled until the maladjustments were searched out and corrected. The station had been off the air for more than twelve hours.

The court pointed out that the statutory authority given the commission to suspend the license of any operator who has willfully damaged radio apparatus or installations has underlying it a congressional policy to keep open and available at all times means of communication. That the acts are highly sophisticated sabotage does not lessen, but rather heightens, their offense. The operators' actions constituted "damage" to justify license suspension, even though they had not physically destroyed, broken, or permanently harmed any of the equipment.

The existence of a labor dispute, said the court, or even justification for a strike, is no license for hooliganism. The mere fact that the operators were going on strike when they damaged their employer's transmitter equipment would be no bar to the license suspension. That the operators had believed that disabling without physically destroying was not covered by the statute would not preclude suspension for "willfully" damaging the equipment. The consequences of the employees'

actions were the consequences intended. Their idea that the existence of a labor dispute extended a mantle of immunity to them would not render their acts less willful. *Didriksen et al. v. Federal Communications Commission, 254 F2d 354.*

Rates from Rail-less Station Held Applicable

THE United States court of appeals affirmed a lower court judgment directing railroads to make reparation to a shipper of freight rate overcharges. The railroad tariff had provided that if the aggregate of established rates in interstate traffic produced a lower charge than that published, then the lower charge was applicable. All rates from Iowa border points were on the same level except as to one station which, through a mistake on the part of the railroad, there existed a lower rate.

The railroads attacked the basic injustice of the reparation order. The shipper was, in effect, recovering a windfall, since it had been aware of the lower rate at the station but had continued to pay the going rate without protest, the railroads claimed. There had been no reliance on any conduct of the railroads which resulted in damage. Moreover, the station in question had no rail facilities, and the rates published for that station in the tariff had been a mistake.

The only lawful rate of a railroad is the rate published in the tariff, said the court, and mistaken publication of a rate in a tariff schedule is no justification for departure from the published rates. The fact that the station had no rail facilities did not mean that it had been abandoned. Since the railroads had continued to publish the rates in the tariff, they were still effective. The legality of a rate claimed applicable, pointed out the court, is not dependent upon the equities involved. No proof of damage other than payment of charges in excess of the published rate is necessary in a straight overcharge case based on § 6(7) of the Interstate Commerce Act. The disappearance of a station's rail facilities does not render any rate which may be published from that station invalid. *Armour & Co. v. Atchison, T. & S. F. R. Co. et al. 254 F2d 719.*

Showing of Need Essential to Permit Application

THE Maine supreme judicial court overruled exceptions by a motor contract carrier to the commission's denial of its application for further authority to transport petroleum products in bulk in tank trucks and semitrailer tanks for an oil company.

Though the need for a particular service, which may justify the application of a contract carrier for a permit, may be only that of an individual or firm or group of individuals or firms, who comprise potential contractors for the proposed service, said the court, the commission may by no means ignore the interest of the public in motor carrier transportation in determining the propriety of granting the permit. Contract carrier permits should not be granted in cases where the requested operations would be adverse to the public interest and to the maintenance of a sound and effective motor and rail transportation system.

The commission was held not to have overlooked the necessity for showing need and considering the interests of the public.

The applicant had failed to prove that his proposed operations would serve a real need.

Each additional burden on the highways, pointed out the court, is presumptively undesirable and is justified only by evidence that existing carriers are unable to render services which would be substantially the equivalent of that desired by the individual shipper or shippers for whom the applicant contracted to carry. The commission's findings that the requested operation was not needed and that there was no showing that present common carrier service was inadequate or inefficient was held supported by the evidence. *Merrill v. Maine Pub. Utilities Commission, 141 A2d 434.*

Price Municipality Must Pay for Electric Plant Includes Fair Value Plus Severance Damage

THE Alabama supreme court, in affirming a lower court judgment, held that the price which the city of Ozark, Alabama, must pay for facilities of Alabama Power Company, devoted to serving the city, is comprised of fair value plus severance damage. The trial court had affirmed the commission's determination of fair value and added a maximum amount for severance damage which was agreed to by the city utilities board. The price to be paid by the city was determined according to the formula: Reproduction cost, minus depreciation plus severance damage, equals price.

Under a state statute the commission was required to find the fair value of property proposed to be acquired by a municipality and fix the price which the municipality must offer before proceeding to construct a competing plant. Provision was made for judicial appeal to ascertain whether the commission erred in determining the just compensation.

Certainly it was not intended, said the court, that the commission would initially proceed in one direction and the court on appeal in another. There was no difference, therefore, between "price" and "just compensation." Thus, just compensation was regarded as equal to price (comprised of fair value plus severance damage).

The company, in claiming additional damages relating to diminution of future earnings, argued that the legislature's use of the term "fair value" instead of "market value" indicated that the claimed additional damages were intended to be included in "price." It was contended that "fair value" is something more than "market value." The court expressed the view that if there is any difference between the two terms, fair value is more restricted in scope than market value. Damages, to be compensable, must be direct and reasonably certain, not remote and speculative.

The Alabama court held that the company had been afforded the full protection intended by the statute. *Alabama Power Co. v. Alabama Pub. Service Commission et al. 103 So2d 14.*

Other Recent Rulings

Limousine Service Jurisdictional. Airport limousine service is a contract carrier operation and subject to commission jurisdiction, the Utah commission ruled

in granting a certificate to conduct such service. *Re Salt Lake Transp. Co. Case No. 4529, June 17, 1958.*

Trolleys Give Way to Buses. The Illinois commission approved a bus company's application for a certificate to transport passengers along a route paralleling that of streetcars where a unified transit system under one company's operation would result and the streetcar company had been operating at substantial losses and was desirous of discontinuing its service. *Re Community Coach Co. No. 45013, May 21, 1958.*

Rate Case Expense Amortization. The New Jersey commission authorized a water company to amortize rate case expense over a three-year period, commenting that only the cost of the current rate case would be considered, not the unamortized portion of a previous case, since the purpose of normalization is to reflect the amortization of current expenses. *Re Lakewood Water Co. Docket No. 10493, June 12, 1958.*

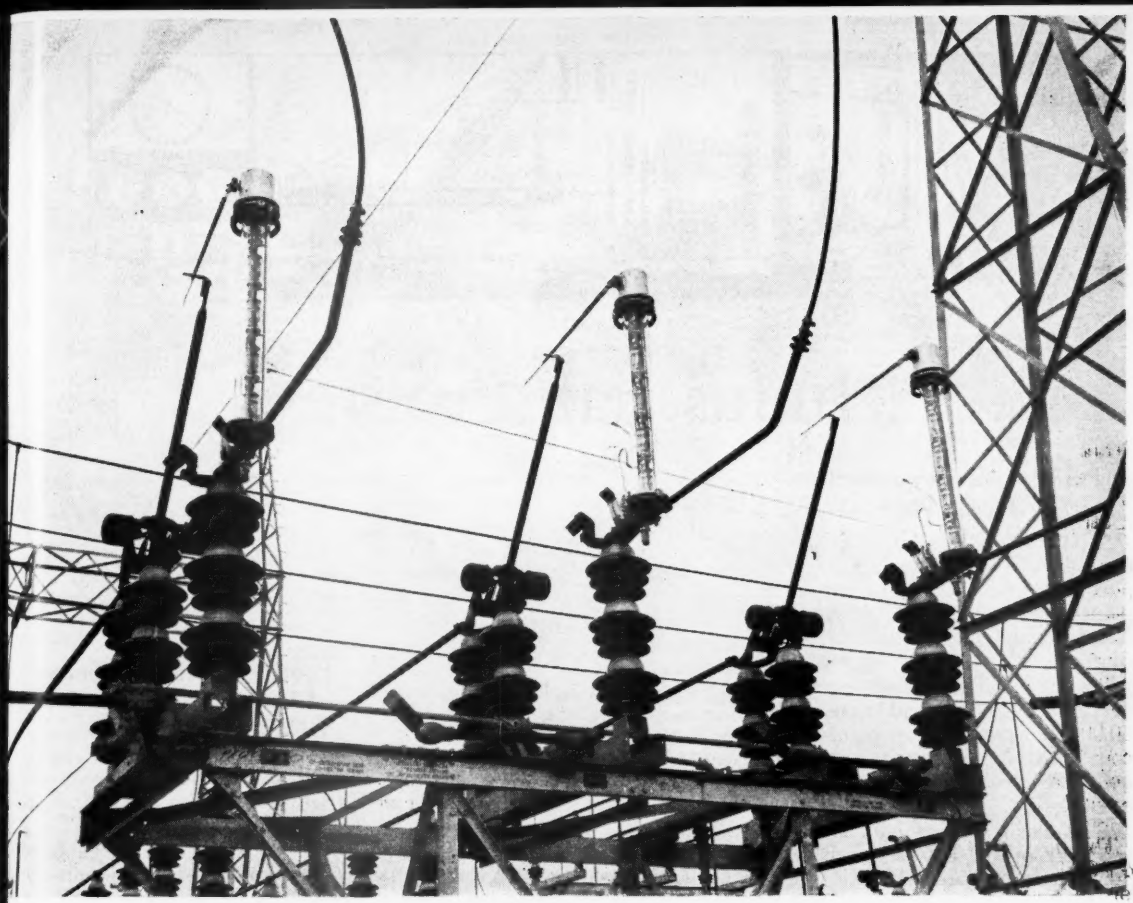
Railroad Agent Discontinued. A railroad company was authorized by the New Jersey commission to discontinue a ticket agent on a commuter route since tickets could be sold at other stations without interfering with passenger service, and the company would thereby realize a reduction in losses on passenger operations. *Re Delaware L. & W. R. Co. Docket No. 10415, June 18, 1958.*

Operation at Loss. The Wisconsin commission approved a municipal gas plant's application for authority to increase rates, notwithstanding that the new rates would still result in operation at a loss, where management had requested the commission to adopt the rates and the bulk of the plant was located in another state, where steps had already been taken to make the new rates effective. *Re City of Ironwood, 2-U-5012, June 30, 1958.*

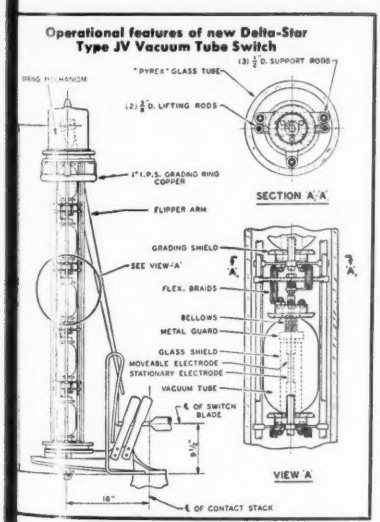
Territorial Authority Unchanged. Although a telephone company's service was inadequate and furnished at a loss, the Indiana commission denied a petition to declare its service area open territory, since there was no applicant able and willing to provide service; but in fairness to the public and the telephone industry, the company could not be granted a certificate of territorial authority. *Re Falmouth Teleph. Co., Inc. et al. Nos. 25181, 27001, 27495, June 20, 1958.*

Competitive Rates. The Missouri commission authorized railroads to increase less-than-carload rates between certain intrastate points to a level approximately equal to motor carrier rates, excepting specified commodities, in view of the deficit operation of less-than-carload service and the diminishing rate of return on system operations. *Re Southwestern Lines Freight Tariff 141, Case No. 13914, July 2, 1958.*

Fuel Clause Eliminated. The California commission deleted an automatic fuel clause from a gas company's tariff where such clause was not consistent with the public interest and had failed in its purpose of maintaining the interruptible gas rates at a level strictly competitive with the price of fuel oil. *Re Pacific Gas & E. Co. Decision No. 56967, Application No. 38668, July 9, 1958.*



OR INTERRUPTING HIGH LOAD AND CAPACITIVE CIRCUITS



—the DELTA-STAR MKV-40 Vacuum Tube Switch

RATINGS UP TO 138kv. The new Delta-Star MKV-40 Vacuum Tube Interrupter Switch answers the need for a high-voltage, high-current interrupting device of long service life at reasonable cost.

Especially well suited for switching capacitive loads, the MKV-40 operates on a thoroughly proved principle whereby the series of high-dielectric-strength Jennings vacuum tubes is in the circuit only during the interrupting cycle. Tubes are also relieved of the duty of re-making the circuit. Long, reliable service life is thereby designed into this high-current interrupter.

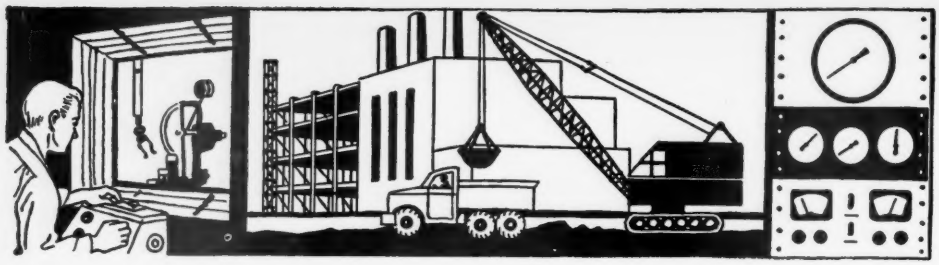
Positive interruption occurs at first current zero, and restrikes are eliminated by the high dielectric strength of the vacuum switch. The vacuum tube switch is maintenance-free throughout. Currents as high as 600A (load) and 200A (capacitive) may be handled with an expected service life of 5,000 operations.

For prints and technical literature, call your nearest Delta-Star representative, or write today direct to *Dept. 456 Delta-Star Electric Division, H. K. Porter Company, Inc., 2437 Fulton Street, Chicago 12, Illinois. District offices in principal cities.*

H. K. PORTER COMPANY, INC.

DELTA-STAR ELECTRIC DIVISION

Connors Steel, Delta-Star Electric, Disston, Forge & Fittings, Leschen Wire Rope, Quaker Rubber, Refractories, Riverside-Alloy Metal, Vulcan-Kidd Steel, H. K. Porter Company, (Canada) Ltd.



Industrial Progress

PG&E Plans Large Nuclear Power Plant

PACIFIC Gas & Electric Company expects to have "at least one 200,000-plus kilowatt capacity" nuclear power plant in operation by 1965, Norman R. Sutherland, president, reported recently.

The new electric generating plant, or plants, will be in addition to the 60,000-kilowatt nuclear plant being constructed by the company at Humboldt Bay on the Northern California coast.

This facility, being built at a cost to PG&E of $20,000,000, is scheduled for completion in mid-1962.

According to a spokesman for General Electric's nuclear power development division in San Jose, PG&E's projected plant is "the largest presently being scheduled in the United States."

The new large nuclear power plant is expected to be built within its Northern and Central California system.

EEI and Batelle Institute Join In Research Program

WAYS to control the growth of trees without impairing their health or appearance will be explored in a five-year research program just launched at Battelle Memorial Institute, Columbus, Ohio.

Maintenance of adequate tree clearance on pole lines is a problem affecting property owners and faced by every electric utility company in providing continuous electric service. Under the sponsorship of the Edison Electric Institute, Battelle scientists will seek an answer to the problem through study of the synthesis, development, and application of plant growth-regulating chemicals. An important aspect of the research will be basic studies of tree physiology as it is related to the regulation of tree growth.

Dr. R. S. Davidson, who will be in charge of the research, said that he and his co-workers hope to develop a treatment that will reduce the frequency of tree pruning to maintain clearance for electric lines. If such a treatment can be found, it should mean improved health and appearance for trees along our streets and highways, the Battelle bioscientist said. It would also offer savings to utility companies through reduction of pruning operations.

The entire program will be under the guidance of a steering committee designated by the Edison Electric Institute. The committee includes: J. W. Anderson, Philadelphia Electric Company (Chairman); R. J. Dreisbach, Ohio Edison Company; Russell Hicock, Connecticut Light and Power Company.

Since many laboratories are currently engaged in research and development on plant growth regulatory substances, members of the steering committee expressed the hope that these organizations will take advantage of the opportunity afforded by the new research program to have selected promising materials evaluated for this important application.

Clary Corp. Issues Brochure On Computing Machine

A SPECIAL 16-page brochure detailing many of the engineering applications for the Clary Electronic Computing Machine is being offered by Clary Corporation, San Gabriel, California.

Written by Frank G. Denison, former director of Weapon System Development Program for Jet Propulsion Laboratories, Pasadena, the pamphlet describes the specific areas where the $15,000 unit can save an engineering department time and money in its calculation and computer work.

Among the engineering applications broken down in step-by-step detail are the numerical evaluation of integral and linear differential equations with constant coefficients.

Public Service of Indiana Plans $24.8 Million Power Station

PUBLIC Service Company of Indiana, Inc., Plainfield, asked the Federal Power Commission for authority to build a $24,824,000 power generating station.

The station, with an expected annual output of about 448 million kilowatt-hours, would be built at the Indiana end of the Markland Navigation Dam now being built by the Army Corps of Engineers on the Ohio river.

"Electrical Hall of Fame" Proposed

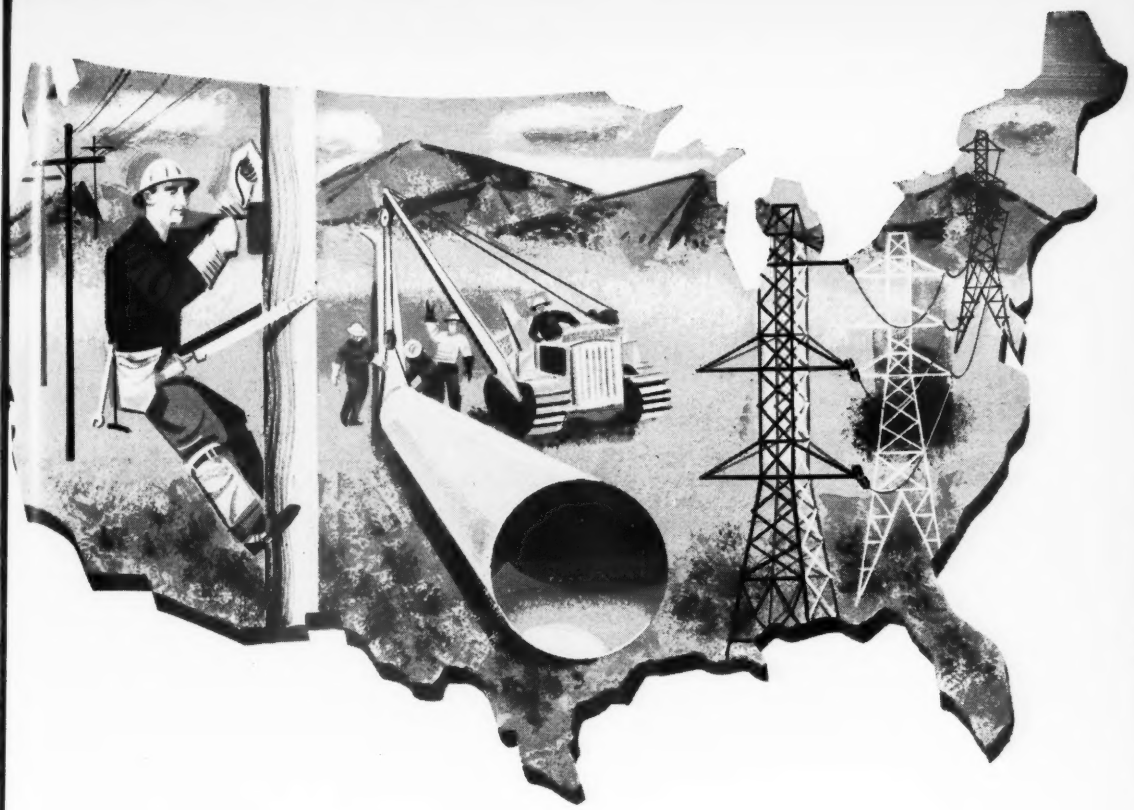
JAMES G. MARSHALL, 88-year-old retired industrial executive, is leading a movement to establish "an electrical hall of fame" in Niagara Falls, New York, birthplace of modern power generation.

The proposed location is the Edward Dean Adams station of the Niagara-Mohawk Power Corporation from which electricity generated sixty-one years ago was used to light the streets of Buffalo twenty-five miles away.

The Adams station, now inefficient but still providing much needed power to area industries, will be retired in about three years, when the State Power Authority's Niagara project at Lewiston is completed.

Marshall envisions preservation of the station as a shrine to Niagara power pioneers and to the first commercial use of alternating current. He

(*Continued on page 28*)



Lifelines of the nation!

Playing a dynamic role in the economy of our nation, the investor-owned Utility Industry continues to expand its lifelines of service. Not only meeting the needs of today's consumers, but preparing also for an atomic age, Utilities are faced with enormous capital expansion requirements.

To assist in the many financial complexities accompanying this growth, Irving specialists are ready with new and sound approaches. Our Analytical Studies, Seminars, and Round Tables, may bring added vitality to your capital planning, financing, or cultivation of the financial community.

For more information, call Public Utilities Department at DIgby 4-3500
or write us at One Wall Street

IRVING TRUST COMPANY

One Wall Street, New York 15, N.Y.

Capital Funds over $130,000,000 *Total Assets over $1,600,000,000*

RICHARD H. WEST, *Chairman of the Board* GEORGE A. MURPHY, *President*

Public Utilities Department—JOHN F. CHILDS, *Vice President in Charge*

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

proposed that the station be preserved and that its thirty-two acre site on the banks of the upper Niagara river be developed as a public park.

Marshall would also include other industrial developments in his electrical museum that were made possible by hydroelectric developments in Niagara.

P. H. McCance Joins Edwin L. Wiegand Co.

APPOINTMENT of Pressly H. McCance, former president of Duquesne Light Company, as an executive of Edwin L. Wiegand Company, world's largest exclusive manufacturer of electrical heating equipment, was announced recently.

Ernest N. Calhoun, president of Wiegand, said Mr. McCance will be assistant to the president, with the principal assignment of coördinating the company's relationships with electric utilities throughout the country.

Mr. McCance has been active in the utility industry for 35 years. He retired as president of Duquesne Light Company last June 30, one day a reaching the age of 65.

The background and experienc Mr. McCance in the electric ut field will further Wiegand's effor cooperate with utility companie promoting the growth of electric h ing for residential, industrial c mercial and institutional markets, Calhoun said.

Wiegand is a pioneer in the velopment of equipment for ele heating and manufactures more 15,000 types, sizes and ratings o "Chromalox" heating elements units.

With utility companies pushing all-electric living, the industry xp electric heating to expand substan ly. One source predicts that the billion kilowatt hours consumed electric heating in 1956 will clim 11.9 billion by 1960 and surge to by 1970.

With the continuing growth of c pletely integrated power stations the potential economic generation power by atomic energy plants, n electricity at low cost for elec heating will be available, Mr. Calh said.

Mr. McCance had been president Duquesne Light since 1942. Du his term as president, Duquesne c pleted the first full scale ato powered generating plant at S pingport, Pa. The company's g erating capacity has more t doubled in the last 16 years.

AIEE Farm Electrification Conference At New Orlea October 20-22

NEW ORLEANS has been sele as the site for the American Insti of Electrical Engineers' Farm E trification Conference, October 22. It will be held in the Hotel M teleone. Sixteen papers will be sented in five sessions.

G. C. Rawles, vice president of Louisiana Power & Light Co., deliver the opening address. His t will be "What's Ahead in Farm E trification?" The guests will be w comed by S. G. Dinkel, chairman the New Orleans Section of AI Harold W. Kelley, chairman of AIEE Farm Electrification Subco mittee, will outline the progr which will include papers on irri tion motors, muckland dewater lightning arresters, voltage regu tors, motors for farm use, farm w ing, soil reclamation, electric heati

(*Continued on page 3*)

This advertisement is neither an offer to sell nor a solicitation of offers to buy any of these securities. The offering is made only by the Prospectus.

NEW ISSUE

August 21, 1958

$60,000,000

Public Service Electric and Gas Company

First and Refunding Mortgage Bonds, 4⅝% Series due 1988

Dated August 1, 1958 Due August 1, 1988

Price 102.046% and accrued interest

Copies of the Prospectus may be obtained from any of the several underwriters, including the undersigned, only in States in which such underwriters are qualified to act as dealers in securities and in which the Prospectus may legally be distributed.

The First Boston Corporation

Dick & Merle-Smith — **Eastman Dillon, Union Securities & Co.**

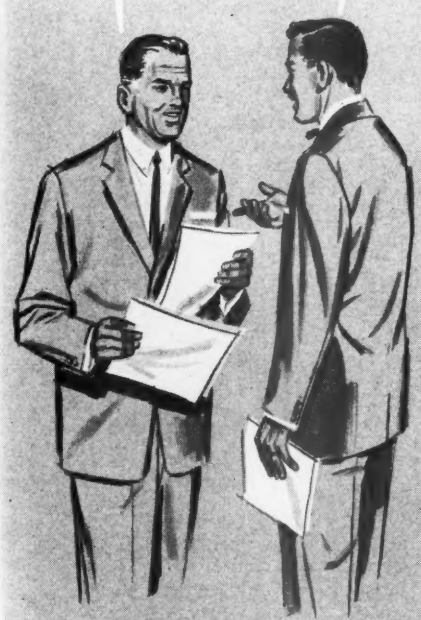
Carl M. Loeb, Rhoades & Co. — **Merrill Lynch, Pierce, Fenner & Smith**

R. W. Pressprich & Co. — **Salomon Bros. & Hutzler** — **Wertheim & Co.**

F. S. Moseley & Co. — **Dean Witter & Co.** — **Wood, Struthers & Co.**

The design work on all these new substations is going to be hard to handle with our present force.

Of course! They have enough to do handling routine duties. Why don't you call in Pioneer?



GIVE YOUR NON-ROUTINE OPERATIONS TO PIONEER

Design and Consulting Engineering Services

Pioneer has specialized in design ing power plants for 56 years. It offers design service for fossil fuel, hydro and atomic plants. It will also assist in forecasting load growth, in site selection, in purchasing and expediting of equipment and in supervising construction. Pioneer's other services include substation, transmission and distribution studies and design.

Services in Regulatory Matters

Pioneer offers its services in all phases of Federal, State and Local regulation including the rate base, depreciation analysis, cost of service studies, market analysis, certificate proceedings and rate of return.

Corporate Services

Pioneer's services in corporate matters include business and management engineering advice, financial, accounting and tax counsel and insurance and pension plans and programming. It operates a stock transfer and dividend disbursement service and maintains stock ledgers when desired.

NEW!
On your letterhead, write for 40-page booklet, "Pioneering New Horizons in Power." Describes, illustrates Pioneer's engineering services, and corporate services, from financing to operation.

56 YEARS

Pioneer Service & Engineering Co.

231 South La Salle Street
Chicago 4, Illinois

heat pumps, water pumps, research and transformers. The conference will be summarized by W. J. Ridout, Jr., editorial director of Electricity on the Farm, New York.

Inspection trips will be made to the Southern Research Laboratory and the International Harvester Twine Plant.

R. D. Karns Named Chemical Engineer by Bituminous Coal

ROBERT D. KARNS, former process improvement engineer with Pittsburgh Coke and Chemical Company, has been appointed chemical engineer for Bituminous Coal Research, Inc., the national research association for bituminous coal.

In announcing his appointment, James R. Garvey, BCR's director of research, said that Karns has been assigned to one of the new projects cosponsored at BCR by the coal and electric utility industries—control of sulfur dioxide and other contaminants in flue gas.

Specifically, Mr. Karns will undertake at BCR's Pittsburgh laboratory a chemical engineering evaluation of the existing processes concerning such control or possible removal of contaminants.

Pittsburgh Host to AIEE General Meeting October 26-31

PITTSBURGH, Pennsylvania, will be host to the Fall General Meeting of the American Institute of Electrical Engineers October 26-31, it has been announced by A. A. Johnson, general chairman. It will be the first time the Institute has had a general meeting there since AIEE was organized in 1884.

Theme of the general session Monday, October 27 in the ballroom of the Penn-Sheraton Hotel, meeting headquarters, will be "Atomic Energy and the Shippingport Project," with Mark Cresap, president of Westinghouse Electric Corp., speaking on atomic power.

Two important luncheons are scheduled. At the first, Tuesday, (October 28) the speaker will be Adolph W. Schmidt, president of the Allegheny Conference on Community Development, and vice president and governor of T. Mellon and Sons. He will relate the events which have earned Pittsburgh the title of "Renaissance City of America." The second luncheon will be held on Thursday (October 30). Its theme will be "Research in the Pittsburgh Area," and it will be attended by directors of research of the many companies in the area. A feature of this session will be presentation of the John Fritz Medal to Dr. Marvin J. Kelly, president of Bell Telephone Laboratories, Inc.

Ten technical sessions are planned during which many of the committees and subcommittees in the six technical divisions of AIEE are planning 67 sessions on nucleonic and radiation instruments, data communications, management, research, electronics, safety, mining industry, communications, power generation, transmission and distribution, industrial and commercial power systems, basic science, computers, education, land transportation, nucleonics, radio and television and related subjects.

Inspecting trips are planned to the U. S. Steel Corporation, Westinghouse Electric Corp., Forest Hills and Waltz Mill atomic installations, Duquesne Light Company's atomic power station at Shippingport, Aluminum Company of America and Pennsylvania Railroad.

CONSULTING ENGINEER

MUST HAVE TRAINING AND EXPERIENCE IN STEAM POWER PLANT AND ELECTRIC UTILITY SYSTEM PLANNING AND OPERATIONS. EXCELLENT OPPORTUNITY FOR MAN WITH ADMINISTRATIVE ABILITY. SMALL PHOTOGRAPH DESIRABLE. ALL REPLIES CONFIDENTIAL.

ADDRESS BOX 911,

PUBLIC UTILITIES FORTNIGHTLY,
332 PENNSYLVANIA BUILDING,
WASHINGTON 4, D. C.

Air-Safety Spheres Eliminate Hazard To Aircraft of Unmarked Utility Lines

"AIR Safety Spheres" are doing a successful job eliminating one of aviation's greatest hazards—unmarked, hard-to-see utility lines, according to the manufacturer, Mutto Manufacturing Company, Canton, Ohio.

Since their introduction five years ago, the company reports that power companies, airlines, airport authorities, private pilots and industrial concerns all over the world have purchased and installed the spheres. The company further states that in every case, after the spheres have been installed there have been no further accidents reported involving planes and wires.

When mounted on a wire at fr 20 to 75 foot intervals, depending the nature of the installation, bright orange spheres make the w clearly visible to pilots.

The spheres are used by pow companies to mark high tension li that are in the path of low flying p vate and commercial aircraft. some cases the spheres have been stalled on power line spans ext nd for more than a mile. The spheres only provide greater aviation saf but they eliminate a major cause damage to expensive power instal tions and costly interruptions of se ice.

"Air Safety Spheres" were vised by T. R. Mutto, president Mutto Manufacturing to elimina tragedies which occur when pilots headlong into virtually invisible ity wires.

The spheres are made of sp aluminum and are finished with bright orange enamel. Each sphe measures 20 inches in diameter a weighs approximately four pound The spheres are manufactured two halves and installed by clampi the bottom half to the wire and th fastening the top half over the bo tom half.

Checks on "Air Safety Sphere after installation show that they a not affected by high winds, ice, ra or salt spray and they cause no dam age to the wires on which they a fastened.

New Lighting Unit Made By Duro-Test

THE Illuminating Engineering Soc ety gave recognition recently to Dur Test Corporation of North Berge N. J., for development of a ne source for general lighting. This reportedly the first time an indepen ent lamp maker has been so honore

Lighting engineers and scientis meeting at Toronto, Ont., heard th reading of a paper describing th "Fluomeric lamp" which asserted combines in one long-lasting unit th best features of incandescent, fluores cent and mercury vapor lighting. H. Strauss and W. E. Thoure, tw Duro-Test scientists who contribute to the lamp's development, presente the paper.

Company spokesmen said that th group's papers committee had re viewed technical papers on new ligh sources for seven months but tha the Duro-Test paper was the onl

(*Continued on page 32*)

Whether in general operations, financing, engineering or other business matters, the consulting and advisory services of Commonwealth can be of material assistance.

These services are integrated with the plans and policies of client management in accomplishing the desired objectives. Commonwealth experience is built on work covering many states and companies, in operations varying from a few employees to thousands, and in projects from a few dollars to many millions.

Commonwealth is an independent organization built on a business record of 50 years, and wholly owned by officers and employees.

Let our booklet tell you more.

COMMONWEALTH SERVICES INC.

York, N. Y. Jackson, Mich. Washington, D. C. Houston, Tex.

300 PARK AVENUE, NEW YORK 22, NEW YORK

COMMONWEALTH ASSOCIATES INC.

JACKSON, MICHIGAN

The Commonwealth Professional Engineering Organization

FINANCIAL
RATES
INSURANCE
PURCHASING
GAS OPERATIONS
CORPORATE
PENSIONS AND WELFARE
BUSINESS DEVELOPMENT
INDUSTRIAL RELATIONS
PUBLIC RELATIONS
STOCK TRANSFER
PROXY SOLICITATIONS
GENERAL CONSULTATION
ENGINEERING—
CONSULTING AND DESIGN
TAXES
DEPRECIATION
ACCOUNTING

one to be presented this year on a new source for general lighting. This is said to be equivalent to industry-wide recognition and is also the first new light source to be recognized since the successful development of fluorescent lighting some twenty years ago.

The new Fluomeric lamp is reported to have a life of 6,000 to 12,000 hours. It combines the orange light of pure tungsten incandescent filaments, the blue and green mercury vapor and deep red of fluorescent phosphors. The lamp is manufactured in 450 and 750 watt sizes.

New Booklet Offered As Guide To Selection Of Office Copying Machines

A NEW eight page illustrated booklet, especially prepared as a factual guide in the selection of office copying machines, has been published by Copease Corporation, national distributors of Copease photocopy machines and supplies.

Titled "The Truth About Office Copying Machines," the booklet analyzes the principal reasons for the growing use of copying equipment in modern business offices, and points out the advantages and disadvantages, if any, of the various copying machines on the market. The booklet answers typical questions asked regarding the main points to be considered when selecting an office copying machine, according to Copease Corporation.

Copies of the new booklet and additional information on Copease photocopy machines may be obtained from Copease Corporation, 425 Park avenue, New York, New York.

Colorado's First All-Gas Home Draws 2,000 on Weekend in Greeley

COLORADO'S first All-Gas Hom equipped with the latest gas applianc and gas equipment, attracted an est mated 2,000 visitors to a Grand Op House in Greeley (population a proximately 25,000), during Satu day and Sunday, July 26 and 27.

Although not planned for imme ate sale, the house was sold in ear August at the builder's price of $23 500, as a result of the weekend pr motion. Several other builders ha expressed considerable interest, a negotiations are already und with prospects for two more simil All-Gas Homes.

The handsome new home, custo built by Herman Wolff Constructi of Greeley, is one of the first su modern and convenient All-G Homes in the nation. All gas appl ances and gas equipment in the ho were supplied and installed by Gr ley Gas Company, which sponsor the event.

According to Paul L. Good, vi president and general manager of t Greeley utility, nearly six months planning and cooperation with buil er and gas equipment suppliers a counted in large measure for the su cess of the All-Gas Home project.

William Thomas, new busine manager for the utility, reporte "We consider this a highly succes ful promotion, especially for a co munity of modest size. We've o tained a great many excellent leads gas appliances and equipment, a many of these have already been co verted to sales. Many of the rest lo like good prospects, too."

The new All-Gas Home offers balanced combination of features both indoor and outdoor living. 1,500 square feet of efficient flo space includes three large, airy be rooms, bath-and-a-half, and a cover patio with built-in-Bar-B-Q and Bo ser "Smogmaster" gas incinerator.

In addition to a Bryant "Crysta glas" automatic gas water heater, t full basement features a compact Ar la-Servel year-round gas air con tioning unit. A gas light installed the front yard is also produced Arkla-Servel.

The kitchen and laundry area i cludes a fully automatic built-in oven and built-in surface range un "Ice Magic" gas refrigerator wi automatic ice-cube maker; automat gas combination washer-dryer; a

This announcement is not an offer to sell or a solicitation of an offer to buy these securites. The offering is made only by the Prospectus.

$50,000,000

Southern California Edison Company

First and Refunding Mortgage Bonds, Series K, Due 1983

4⅝%

Dated September 1, 1958 Due September 1, 1983

Price 101.113% and accrued interest

The Prospectus may be obtained in any state in which this announcement is circulated from only such of the undersigned and other dealers as may lawfully offer these securities in such state.

HALSEY, STUART & CO. INC.

BEAR, STEARNS & CO. L. F. ROTHSCHILD & CO. SALOMON BROS. & HUTZLER

DICK & MERLE-SMITH FRANCIS I. duPONT & CO.

PAINE, WEBBER, JACKSON & CURTIS R. W. PRESSPRICH & CO.

BACHE & CO. GREGORY & SONS SHEARSON, HAMMILL & CO.

BAXTER & COMPANY BURNHAM AND COMPANY HIRSCH & CO.

NEW YORK HANSEATIC CORPORATION WM. E. POLLOCK & CO., INC.

STROUD & COMPANY INCORPORATED BAKER, WEEKS & CO. STERN BROTHERS & CO.

FAHNESTOCK & CO. J. C. BRADFORD & CO. COOLEY & COMPANY

COURTS & CO. SHELBY CULLOM DAVIS & CO. IRA HAUPT & CO.

H. HENTZ & CO. McDONNELL & CO. VAN ALSTYNE, NOEL & CO.

August 26, 1958

tomatic dishwasher and garbage sposer.—all manufactured by RCA Whirlpool.

Greeley Gas Company operates tural gas distribution systems in anon City and Craig, Colorado, in dition to Greeley and 12 other Weld unty communities. In December e firm also purchased properties in o districts serving 17 communities Kansas.

Greeley Gas Company advertising, blicity and collateral material is epared by Galen E. Broyles Co., c., Denver advertising agency which s served the gas utility for eleven ars.

Hubbard and Company Expansion Program Is Well Under Way

HE recently announced decision Hubbard and Company to consoli- te the manufacture of pole line rdware at its Chicago and Oakland, lifornia plants, is part of a compre- nsive expansion and modernization ogram initiated some years ago to et the growing demands of the ctric and communication utilities. e program is rapidly nearing com- tion.

Particular emphasis has been given improvement of the Chicago facil- es. Upon completion of present ditions to that plant, and extensive provements in layout and methods, is expected, according to one of the mpany's officials, that Hubbard and mpany will have one of the most dern and efficient manufacturing nts in the industry. Production pacity will be increased by enlarg- plant facilities, installing new ma- inery and modernizing machine op- ations, assembly and materials ndling. New and enlarged ware- uses and loading docks, combined th integrated shipping and ware- using operations will expedite de- veries.

The expansion and enlargement of plant at Oakland, now completed, s another major step in this pro- am. The warehouse and shipping ilities at Plano, Texas, have also en improved and added to, with ple space and facilities available r future expansion.

Another major step in this compre- nsive program was the decision to ve the executive offices from Pitts- rgh to the Borg-Warner building icago.

The general offices of Hubbard and mpany, now established at the Chi- cago plant, 5401 West Roosevelt Road, have been modernized in every respect. New, high-speed accounting procedures and facilities have been installed throughout for fast, efficient handling of orders and customer service.

A very important part of the complete program is the new Hubbard Electrical Research Laboratory in McCook, Illinois, which was dedicated recently. This laboratory has completely integrated facilities for testing, developing and perfecting hardware and electrical apparatus products for the electric and communication utilities.

Gas Air Conditioning Units Of Smaller Size But Larger Capacity To Be Introduced

SMALLER gas air conditioning units with increased capacity will be marketed in the near future, the American Gas Association's Air Conditioning Promotion Committee learned recently from leading manufacturers in the field.

Seven manufacturers of gas air conditioning units reported on present products and research for the future, according to W. W. Selzer of the Columbia Gas System Service Corporation, New York City, committee chairman.

Quieter units with increased economy and efficiency are undergoing final tests, Mr. Selzer said. Not only will they cool and dehumidify more efficiently than other type units, but they will purify air by ridding it of odors and germs, he stated.

Manufacturers pointed out that gas air conditioning units now on the market have been proved virtually trouble-free. They range in capacity from three tons for domestic use to several thousand tons for commercial and industrial installations.

Present at the meeting were representatives of Arkla Air Conditioning Corp., Bryant Manufacturing Co., Carrier Corp., Comfort Products, Inc., Ready-Power Co., Weatherbuster Corp., and York Corp.

Anderson Electric Corporation Goes Underground!

ENTRY into the underground field by Anderson Electric Corporation of Birmingham, Alabama has been announced by C. E. Bitzer, vice president of sales. Several lines of connectors mark the first step in Anderson's rapidly expanding program to bring to its customers the most complete and advanced line of underground connectors and fittings in the electrical industry.

Representative types available are:

Type HU Insulated Compression Connector. Economical and quickly installed, the HU connectors are designed for use in joining secondary network cables at junction points. They are completely insulated with time-proven P-40 Performite rubber coated with neoprene. Available with four to twelve cable outlets. Installed with standard indent tools.

Type HCL Compression Lug. Designed to accommodate copper cable from #6 through 2000 MCM. Installed with standard indent tools.

Split Tinned Copper Connectors. Manufactured in accordance with the latest EEI specifications from high conductivity copper, hot dip tin plated.

Electric Utilities And Coal Industry Co-sponsor Research Program

THE electric utility and the coal industries have joined forces to finance a major research program.

The program is being sponsored by the Association of Edison Illuminating Companies and Edison Electric Institute, representing the investor-owned electric utility companies and Bituminous Coal Research, Inc., representing the coal industry.

This cooperative effort is particularly significant because it reflects the realization by two major American industries of a long-range mutual interest.

The projects, to be conducted during a two-year period beginning this summer, will be undertaken in the laboratories of Bituminous Coal Research, Inc., the national research association for bituminous coal.

The research organization will attack both ends of a problem involving the reduction of sulfur dioxide and other contaminants in flue gas as produced and the reduction of sulfur in steam coals prior to burning. At present, methods for removing contaminants from flue gases are economically unattractive.

The research program will be supervised by the Joint Research Advisory Committee, composed of J. A. Keeth, chairman, Kansas City Power & Light Company, Kansas City, Missouri; A. A. Casey, The Cleveland Electric Illuminating Company, Cleveland, Ohio; P. H. Hartung, Public Service Electric and Gas Company,

Newark, New Jersey; T. M. Hotchkiss, Southern California Edison Company, Los Angeles, California; J. E. Tobey, Appalachian Coals, Incorporated, Cincinnati, Ohio; and E. C. Payne, Consolidation Coal Company, Pittsburgh, Pennsylvania.

Two West Coast Utilities Find Coal Seams Containing 70 Million Tons

COAL seams containing 70,000,000 tons of fuel have been geologically mapped to date by Pacific Power & Light and Washington Water Power companies in a continuing joint investigation of western Washington coal fields near Centralia.

Purpose of the exploration is to determine feasibility of using the area's sub-bituminous coal to augment Pacific Northwest power supplies when economic hydroelectric sites approach full development.

Fuel tonnage blocked out by core-drilling crews since work started last September was estimated to be sufficient in quantity to supply a 300,000-kilowatt steam power plant for approximately 50 years.

Probable cost of getting the coal out of the ground and under the boilers was described as one of the key factors to be determined by the field study.

Progress of the field investigation was characterized as "satisfactory" by Paul B. McKee, president of Pacific Power & Light, and Kinsey M. Robinson, president of Washington Water Power, who recently inspected the area.

Three drilling crews are working in the 33,000-acre section of northern Lewis and southern Thurston counties where the two utilities have obtained exploration and development rights.

Core drills are used to take cross-section samples of the underground structure at selected points in the coal-bearing area. From these samples, geologists and engineers are mapping the depth, thickness and quality of the coal seams. More than 14,000 feet of core material has been taken out for analysis to date, it was stated.

Even though the record hydroelectric development program now under way will add 7,000,000 kilowatts of Pacific Northwest power generating capacity in the next few years, McKee and Robinson pointed out that additional energy sources will be required to meet the region's long-term growth in electric power needs.

"This coal study is part of our long-range planning to be ready to meet the needs of customers at the time when economics will dictate the construction of steam plants," they stated. "We are looking carefully into both coal and nuclear fuel as future thermal-energy sources."

The western Washington coal deposits in past years were the scene of substantial mining operations around the communities of Bucoda and Tono. U. S. Geological Survey studies have developed much information about the area but the field has not previously been the object of a full-scale drilling investigation such as the two electric companies are now pushing forward.

Best Way You Can Keep Informed on Utility Regulation:

P.U.R. QUESTION SHEETS

With the least possible expenditure of time, effort and money, *utility executives, lawyers, accountants, engineers* and *others* interested in any *phase* of *public utility regulation* can keep well informed through these *brief, four-page leaflets* issued every two weeks.

They consist of 10 questions and 10 authoritative answers based on current decisions revealing court and commission views pro and con. Annual subscription $10.

Send your order to

Public Utilities Reports, Inc.,
332 Pennsylvania Bldg.
Washington 4, D. C.

Water Plans Offered Power

NEEDED California water conservation projects at the lowest cost can best be accomplished by coöperation between public and private agencies. This was a statement made by Pacific Gas and Electric Company's chief executive, Norman R. Sutherland. He made the statement at the dedication of the company's new 106,000 kilowatt power house, which is part of the Feather river system. Mr. Sutherland called attention to the successful Tri-Dam project on the Stanislaus river as an example of the company's coöperative arangements with local irrigation districts. He said the Tri-Dam was made economically feasible by the company's coöperation. The PG&E's utility chief also defined the company's formula for assisting water development in cases where potential electric power could not be produced at commercially competitive costs. He said in such cases the company offers to pay for the power an amount equal to the cost of obtaining equivalent power from the most economical source—modern steam plant at or near large load centers. He said that power thereby provides the maximum financial assistance for the water development and is done at no incremental cost to electric customers.

Aotmic Powered Saline Water Plant

A SEA-WATER conversion unit powered by nuclear energy can be built in Southern California within five to ten years that will produce fresh water at a cost of around $16 an acre foot, according to scientists. Its capacity would be 50 million gallons of water a day.

Two developments prompted the optimistic prophecy. First was the start of the Fluor Corporation of an intensive program under a $100,000 contract with the Federal and state governments to determine the feasibility of using atomic energy as a means to convert salty water to fresh. Second was the approval by Congress of a $10,000,000 appropriation to be used for building 5 saline conversion demonstration plants with the possibility that one of them might be erected in California.

A pressurized water thermal reactor process will be used by the Fluor company in its efforts to find the most economical method for making fresh water from salty by using atomic heat. Its aim is to get the cost down to $16 per acre foot of water within 10 years. Present cost of water from the Colorado river supplied by the Metropolitan Los Angeles Water District is $125 per acre foot, including taxes.

Saves By 108-Mile Coal Pipeline

NOW in full operation is a 108-mile coal pipeline connecting the Eastlake Plant of the Cleveland Electric Illuminating Company with the coal fields of southern Ohio. According to M. Lindseth, president of the company, the pipeline will deliver 1,250,000 tons of coal a year from Consolidation Coal Company's mine in Georgetown, Ohio, to the Eastlake generating plant at Eastlake, Ohio. He said the amount represents about 40 per cent of the company's present total annual coal requirements and 80 per cent of the consumption at Eastlake.

PROFESSIONAL DIRECTORY

● This Directory is reserved for engineers, accountants, rate experts, consultants, and others equipped to serve utilities in all matters relating to rate questions, appraisals, valuations, special reports, investigations, financing, design, and construction.

63 years of leadership in property valuation

The AMERICAN APPRAISAL Company ®

Home Office: Milwaukee 1, Wisconsin

Offices in 18 cities coast-to-coast

BLACK & VEATCH

CONSULTING ENGINEERS

Electricity, Natural Gas and Water Utilities
Production, Transmission, Distribution
Reports, Design, Supervision of Construction
Investigations, Valuation and Rates

1500 MEADOW LAKE PARKWAY, KANSAS CITY 14, MISSOURI (SINCE 1915)

BONI, WATKINS, JASON & CO., INC.

Economic & Management Consultants

37 Wall Street
New York 5, N. Y.

437 Shoreham Bldg.
Washington 5, D. C.

Rate Cases — Management and Market Studies — Rate of Return Analysis
Cost of Service Determination — Economic and Financial Reports

---

DAY & ZIMMERMANN, INC.

ENGINEERS & CONSTRUCTORS

NEW YORK — PHILADELPHIA — CHICAGO

Design — Electric Line Construction — Management — Reports and Valuations

---

DRAKETOWN 9999 ®

PROPANE PLANTS

★ ***Standby***
★ ***Augmentation***
★ ***100% Town Supply***

Design • Engineering • Construction

DRAKE & TOWNSEND INCORPORATED — 11 WEST 42ND STREET NEW YORK 36, N. Y.

F B&D

Ford, Bacon & Davis

VALUATION REPORTS — **Engineers** — CONSTRUCTION RATE CASES

NEW YORK • CHICAGO • LOS ANGELES

(Professional Directory Continued on Next Page)

PROFESSIONAL DIRECTORY
(continued)

FOSTER ASSOCIATES

Rate Cases • Cost of Service and Other Regulatory Methods
Rate of Return Analyses • Rate Design
Natural Gas Field Price Problems • Economic and Financial Reports

1523 L STREET, N.W.
WASHINGTON 5, D. C.

326 MAYO BUILDING
TULSA 3, OKLAHOMA

GIBBS & HILL, INC.

Consulting Engineers
DESIGNERS • CONSTRUCTORS
Los Angeles **NEW YORK** Tampa

GAI
FOUNDED 1906

GILBERT ASSOCIATES, INC.

ENGINEERS and CONSULTANTS
525 LANCASTER AVE.
READING, PA.
WASHINGTON • NEW YORK

W. C. GILMAN & COMPANY

CONSULTING ENGINEERS
ELECTRIC — GAS — TRANSIT — WATER
Financial and Economic Reports
Valuations—Rate of Return—Depreciation Studies
Traffic Surveys—Fare Analyses

55 Liberty Street — New York 5, N. Y.

Harza Engineering Company

Consulting Engineers
Calvin V. Davis — Richard D. Harza — E. Montford Fucik
REPORTS — DESIGN — SUPERVISION
HYDROELECTRIC PLANTS AND DAMS — TRANSMISSION LINES — FLOOD CONTROL — IRRIGATON — RIVER BASIN DEVELOPMENT

400 West Madison Street — Chicago 6, Illinois

GUSTAV HIRSCH ORGANIZATION, INC.

1347 West 5th Ave., Columbus (12) Ohio
Telephone Hudson 8-0611
Consulting and Supervisory Engineers and Contractors
Construction and Operation of Utility Enterprises

HOOSIER ENGINEERING COMPANY

Erection and Maintenance of
Electrical Transmission and Distribution Lines

1350 HOLLY AVENUE • COLUMBUS, OHIO

Mention the FORTNIGHTLY*—It identifies your inquiry*

PROFESSIONAL DIRECTORY *(continued)*

INTERNATIONAL ENGINEERING COMPANY, INC.

Design and Consulting Engineers

Dams—Power Plants—Transmission Lines—Railroads—Highways
Investigations—Reports—Plans and Specifications
Cost Estimates—Supervision of Construction

74 New Montgomery Street — San Francisco 5, California

JENSEN, BOWEN & FARRELL

ENGINEERS
ANN ARBOR, MICHIGAN
APPRAISALS—INVESTIGATIONS—DEPRECIATION STUDIES—
COST TRENDS—REPORTS
for Rate Cases, Security Issues, Regulatory and Accounting Requirements
ORIGINAL COST AND CONTINUING PROPERTY RECORD
DETERMINATION

The Kuljian Corporation

ENGINEERS • CONSTRUCTORS
POWER PLANT SPECIALISTS
DESIGN • CONSTRUCTION MANAGEMENT
SURVEYS • INVESTIGATIONS • REPORTS
1200 N. BROAD ST., PHILADELPHIA 21, PA.

William S. Leffler, Engineers Associated

Utility Management Consultants for past 35 years Specializing in

GAS
ELECTRIC
WATER

DEVELOPMENT OF CLASS RATES OF RETURN AND
CLASS UNIT COST DETERMINATIONS FOR
RATE STRUCTURE MODERNIZATION AND RATE CASES

REGULATORY and MUNICIPAL PROBLEMS

Send for brochure: "The Value of Cost Analysis to Management"
DARIEN, CONNECTICUT

CHAS. T. MAIN, INC.

Power Surveys—Investigations—Valuations—Reports
Design and Construction Management
Steam, Hydro Electric and Diesel Plants—Gas Turbine Installations

BOSTON, MASS. • • • CHARLOTTE, N. C.

Pioneer Service & Engineering Co.

CONSULTING, DESIGNING AND
OPERATING ENGINEERS
PURCHASING
231 SOUTH LA SALLE STREET

SPECIALISTS IN
ACCOUNTING, FINANCING, RATES,
INSURANCE AND DEPRECIATION
CHICAGO 4, ILLINOIS

SANDERSON & PORTER ENGINEERS

DESIGN • CONSTRUCTION

NEW YORK — NEW YORK

(Professional Directory Continued on Next Page)

PROFESSIONAL DIRECTORY
(continued)

Sargent & Lundy
ENGINEERS
Steam and Electric Plants
Utilities—Industrials
Studies—Reports—Design—Supervision
Chicago 3, Ill.

STANDARD RESEARCH CONSULTANTS, INC.
Rate of Return • Valuations • Capital Costs
Customer Surveys • Depreciation Studies
Regional Economic Studies • Property Records
345 Hudson St. Watkins 4-6400 New York 14, N. Y.

Stone & Webster
ENGINEERING CORPORATION
DESIGN • CONSTRUCTION
REPORTS • APPRAISALS
EXAMINATIONS
CONSULTING
ENGINEERING
New York Boston Chicago Pittsburgh Houston
San Francisco Los Angeles Seattle Toronto

The J. G. WHITE ENGINEERING CORPORATION
Design—Construction—Reports—Appraisals
Consulting Engineering
80 BROAD STREET NEW YORK 4, N. Y.

Whitman, Requardt and Associates
DESIGN—SUPERVISION
REPORTS—VALUATIONS
1304 ST. PAUL STREET
Publishers of the 35-year-old
HANDY-WHITMAN INDEX
for Public Utility
Construction Cost Trends
Including Hydro-Electric Properties
BALTIMORE 2, MARYLAND

Abrams Aerial Survey Corporation
Topographic and Planimetric Maps
Mosaics, Plans & Profiles for all
Engineering work.
Abrams Bldg. Lansing, Mich.

EARL L. CARTER
Consulting Engineer
REGISTERED IN INDIANA, NEW YORK, OHIO, PENNSYLVANIA, WEST VIRGINIA, KENTUCKY
Public Utility Valuations, Reports and Original Cost Studies
910 Electric Building *Indianapolis, Ind.*

BURNS & McDONNELL
Engineers - Architects - Consultants
KANSAS CITY, MO.
P. O. Box 7088
Phone: DElmar 3-4375

ENGINEERS, CONSTRUCTION AND
MAINTENANCE CONTRACTORS
for the GAS INDUSTRY
CONSOLIDATED
GAS AND SERVICE CO.
327 So. LaSalle St., Chicago 4, Ill.

Mention the FORTNIGHTLY—*It identifies your inquiry*

PROFESSIONAL DIRECTORY *(concluded)*

GANNETT FLEMING CORDDRY AND CARPENTER, INC.
ENGINEERS
Investigations—Reports—Appraisals
Original Cost and Depreciation Studies
Rate Analyses—Insurance Surveys
HARRISBURG, PENNSYLVANIA

MINER AND MINER
CONSULTING ENGINEERS
INCORPORATED
GREELEY COLORADO

FRANCIS S. HABERLY
CONSULTING ENGINEER
Valuation—Depreciation
Investigations and Reports
122 SOUTH MICHIGAN AVENUE, CHICAGO

PITTSBURGH TESTING LABORATORY
Radiography—Soils—Mechanics
Testing—Inspection—Analysis
Main Office, Pittsburgh, Pa.
32 Laboratories in Principal Cities

JACKSON & MORELAND, INC.
Engineers and Consultants
Design and Supervision of Construction
Reports — Examinations — Appraisals
Machine Design — Technical Publications
Boston New York

A. S. SCHULMAN ELECTRIC CO.
Electrical Contracting Engineers
founded 1890
POWER STATION—INDUSTRIAL—
COMMERCIAL—TRANSMISSION LINES—
DISTRIBUTION
2416 S. MICHIGAN AVE., CHICAGO, ILL.
Los Angeles Tampa

PETER F. LOFTUS CORPORATION
PFLC ESTABLISHED 1923
Design and Consulting Engineers
Electrical • Mechanical • Structural
Civil • Nuclear • Architectural
FIRST NATIONAL BANK BUILDING
Pittsburgh 22, Pennsylvania

The R. W. STAFFORD CO.
GAS CONSULTANTS — ENGINEERS
CONSTRUCTORS
Natural Gas Conversions
Plant Management & Operations
Accident & Insurance Investigations
Peak Shaving & Standby Plants
EVANSTON, ILLINOIS
2944 Grant St. Phone UNiversity 4-6190

LUTZ & MAY COMPANY
Consulting Engineers
STEAM, GAS & DIESEL POWER STATIONS
PUMPING PLANTS—ELECTRIC SYSTEMS
REPORTS—DESIGNS—APPRAISALS
1009 Baltimore Kansas City 6, Mo.

SVERDRUP & PARCEL
Engineers & Consultants
Design, Construction Supervision
Steam and Hydro Power Plants
Power Systems—Industrial Plants
Studies—Reports
St. Louis • San Francisco • Washington

J. F. McMAHON ASSOCIATES, INC.
Engineering Consultants
INSTRUMENTATION AND CONTROL
STUDIES • REPORTS
DESIGN • SUPERVISION
P. O. DRAWER 3908, SHAKER SQUARE STATION
CLEVELAND 20, OHIO
GArfield 1-4834

A. W. WILLIAMS INSPECTION CO., INC.
Specialized Inspection Service
Poles, Crossarms, Lumber, Piles, Crossties
Preservative Treatment and Preservative Analysis
208 Virginia St., Mobile, Ala.
New York St. Louis Portland
Inspectors stationed throughout the U.S.A.

Mention the FORTNIGHTLY—*It identifies your inquiry*

INDEX TO ADVERTISERS

[The Fortnightly lists below the advertisers in this issue for ready reference. Their products and services cover a wide range of utility needs.]

A

Abrams Aerial Survey Corporation 38
*Allen & Company .....
*Allis-Chalmers Manufacturing Company .....
American Appraisal Company, The 35
*AMP Incorporated .....
Analysts Journal, The 18
*Anchor Metals, Inc. .....

B

*Babcock & Wilcox Company, The .....
Black & Veatch, Consulting Engineers 35
Blyth & Company, Inc. 13
Boni, Watkins, Jason & Co., Inc. 35
Burns & McDonnell, Engineers 38

C

Carter, Earl L., Consulting Engineers 38
Cleveland Trencher Company, The 7
Columbia Gas System, Inc., The ..... Inside Back Cover
*Combustion Engineering, Inc. .....
Commonwealth Services, Inc. 31
Commonwealth Associates, Inc. 31
Consolidated Gas and Service Company 38

D

Day & Zimmermann, Inc., Engineers 35
Delta-Star Electric Division, H. K. Porter Company, Inc., 25
Dodge Division of Chrysler Corp. 22
Drake & Townsend, Inc. 35

E

*Eastman Dillon, Union Securities & Company .....
*Ebasco Services Incorporated .....
Electro-Motive Division, General Motors 16-17

F

First Boston Corporation, The 28
*Fish Service Corporation .....
Ford, Bacon & Davis, Inc., Engineers 35
Foster Associates 36

G

Gannett Fleming Corddry and Carpenter, Inc. 39
General Electric Company .....21, Outside Back Cover
Gibbs & Hill, Inc., Consulting Engineers 36
Gilbert Associates, Inc., Engineers 36
Gilman, W. C., & Company, Engineers 36
*Glore, Forgan & Company .....

H

Haberly, Francis S., Consulting Engineers 39
Halsey, Stuart & Company, Inc. 32
*Harnischfeger Corporation .....
*Harriman, Ripley & Company .....
Harza Engineering Company 36
Hirsch, Gustav, Organization, Inc. 36
Hoosier Engineering Company 36

I

*International Business Machines Corp. .....
International Engineering Company, The 37
International Harvester Company, The 4-5
Irving Trust Company 27

J

Jackson & Moreland, Inc., Engineers 39
Jensen, Bowen & Farrell, Engineers 37
*Justrite Mfg. Company .....

K

*Kellogg, M. W., Company, The .....
Kerite Company, The ..... Inside Front Cover
*Kidder, Peabody & Company .....
*Kuhn Loeb & Company .....
Kuljian Corporation, The 37

L

*Langley, W. C. & Co. .....
Leffler, William S., Engineers Associated 37
*Lehman Brothers .....
*Line Material Industries .....
*Loeb (Carl M.) Rhoades & Co. .....
Loftus, Peter F., Corporation 39
Lutz & May Company, Consulting Engineers 39

M

Main, Chas. T., Inc., Engineers 37
*Marlow Pumps Division of Bell & Gossett Co. .....
McMahon, J. F., Associates, Inc. 39
*Merrill Lynch, Pierce, Fenner & Smith .....
Miner & Miner, Consulting Engineers 39
*Morgan Stanley & Company .....

N

National Association of Railroad & Utilities Commissioners 14
Newport News Shipbuilding & Dry Dock Company 9

O

*Osmose Wood Preserving Co. of America, Inc. .....

P

*Pacific Pumps, Inc. .....
Pioneer Service & Engineering Company 29, 37
Pittsburgh Testing Laboratory 39
Porter, H. K., Company, Inc., Delta-Star Electric Division 25

R

Recording & Statistical Corporation 11
Remington Rand Div. of Sperry Rand Corp. 15
*Robertson, H. K., Company .....

S

Sanderson & Porter, Engineers 37
Sargent & Lundy, Engineers 19, 38
Schulman, A. C., Electric Co., Engineers 39
*Smith, Barney & Company .....
*Southern Pipe Coating Company .....
Stafford, R. W., Company, The, Consultants 39
Standard Research Consultants, Inc. 38
Stone and Webster Engineering Corporation 38
Sverdrup & Parcel, Engineers & Consultants 39

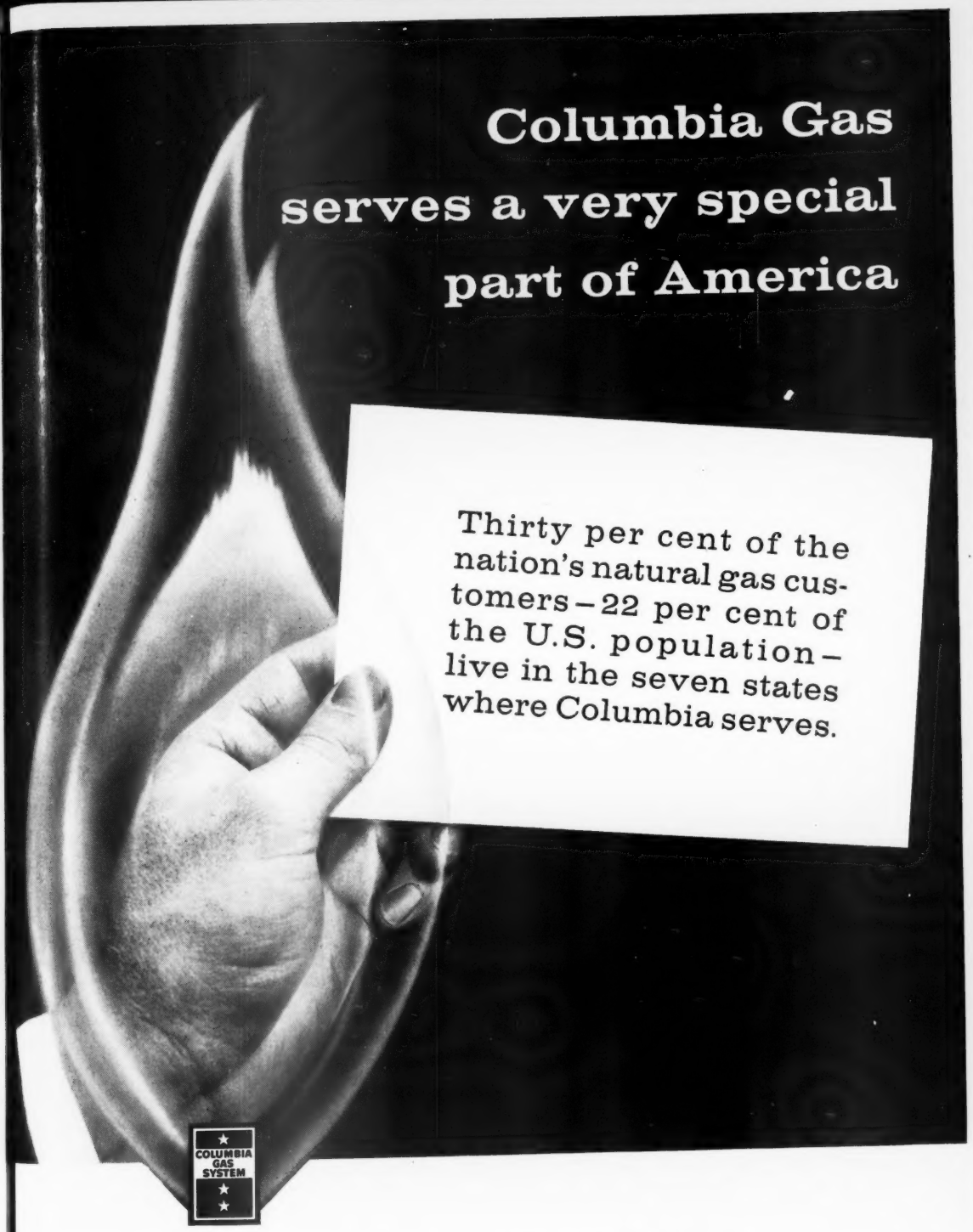
W

*Westinghouse Electric Corporation .....
White, J. G., Engineering Corp., The 38
*White, Weld & Co. .....
Whitman, Requardt and Associates 38
Williams, A. W., Inspection Company, Inc. 39

Professional Directory 35-39

*Fortnightly advertisers not in this issue.

Columbia Gas serves a very special part of America


Thirty per cent of the nation's natural gas customers – 22 per cent of the U.S. population – live in the seven states where Columbia serves.
COLUMBIA GAS SYSTEM

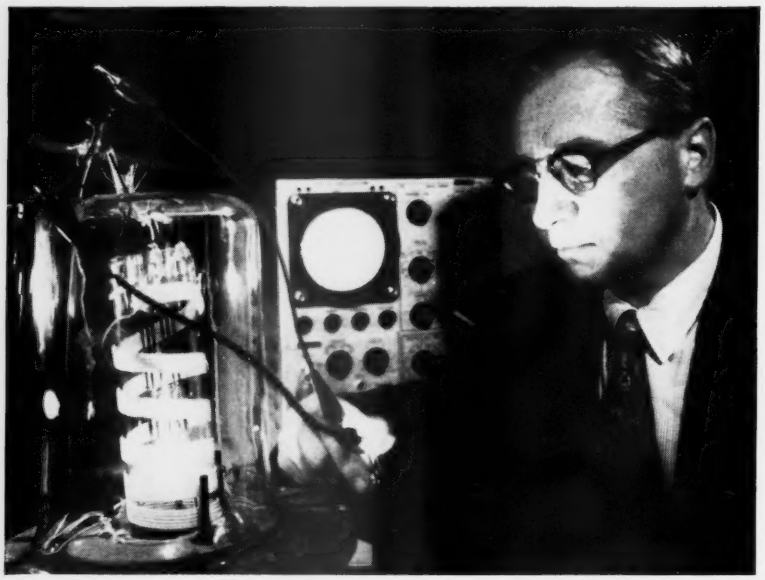
hroughout its service territory—in Ohio, ennsylvania, West Virginia, Kentucky, irginia, Maryland and southern New ork – natural gas continues to be the *referred fuel* for home and industry.

THE COLUMBIA Gas SYSTEM, INC.

COLUMBIA GAS SYSTEM SERVICE CORPORATION
COLUMBIA HYDROCARBON CORPORATION
120 EAST 41st STREET, NEW YORK 17, N. Y.

CHARLESTON GROUP: UNITED FUEL GAS COMPANY, 1700 MacCORKLE AVENUE, S.E., CHARLESTON, WEST VIRGINIA. **COLUMBUS GROUP:** THE OHIO FUEL GAS COMPANY, 99 NORTH FRONT ST., COLUMBUS 15, OHIO. **PITTSBURGH GROUP:** THE MANUFACTURERS LIGHT AND HEAT COMPANY, 800 UNION TRUST BLDG., PITTSBURGH 19, PA.

TODAY'S RESEARCH AND TOMORROW'S POWE



G.E.'S THERMIONIC CONVERTER, as a major power producer is a long way off. Pure research, however, is paying off in new ideas for improving today's generating equipment. Immediate gains are being achieved through research and development on . . .

TECHNOLOGICAL PROGRESS

General Electric's "across the board" approach to scientific research in the development of new sources of energy for generating electricity is expected to yield immediate as well as long-term improvements in power generation equipment.

TWO LONG-TERM PROSPECTS for generating electricity which appear technically and economically feasible in the years that lie ahead are—fission power and fusion power.

In addition to continued technological progress in these areas, intensive research is also being carried on to develop and utilize even more novel sources of energy—the fuel cell, direct conversion of solar energy to electricity, and the thermionic converter.

Investigations in these and other areas will undoubtedly produce unexpected payoffs which can have almost immediate application. The search for fusion power, for example, could lead to by-products in circuit technology or radiation generation long before fusion energy is harnessed for peaceful use.

SIGNIFICANT PROGRESS has already been achieved in the liquid cooling of generator stators. The nation's first large turbine-generator with water-cooled stator windings is now being manufactured by General Electric. The two generators of this cross-compound unit are each rated 265,000-kva at 30 psig hydrogen pressure.

. . . longer last-stage buckets

Water has over twice the heat removal ability of oil. Its use as a liquid coolant will help to open up avenues for: 1) the building of generators of up to one million kva capacity while retaining the basic design simplicity of conventionally-cooled units, 2) significant savings in power plant construction costs, and 3) overcoming the lim tions on higher generator rat ngs posed by current shipping res rict

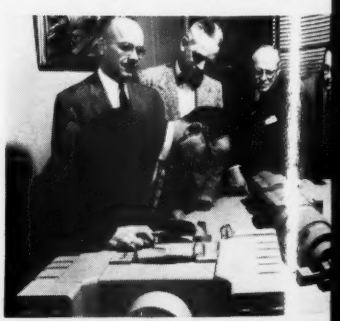
BENEFITS TO ELECTRIC UTILITIES— searching for new knowledge nd italizing on existing technolo ical portunities, General Electric is stri for turbine-generator advances hat continue to result in low operat ng c per kilowatt-hour of electricity p odu Exploring all possible avenues or t nical innovations and product i npr ments also helps electric uti ities satisfy their needs for increase l po capacity. Also, these General Elec research programs mean adde i va in-use for G-E steam turbine-ge nera operated by electric utilities.

FOR MORE INFORMATION on tod research and tomorrow's power at G eral Electric, contact your local Apparatus Sales Office or write for letin GP-81. General Electric Comp Section 301-388, Schenectady 5, N

MORE POWER TO AMERICA

GENERAL ELECTR

. . . new liquid cooling techniqu s



. . . and increasing the capacity of st turbine-generators.